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THE DESCRIPTIONS

By SIR WILLIAM JACKSON HOOKER, K. H.

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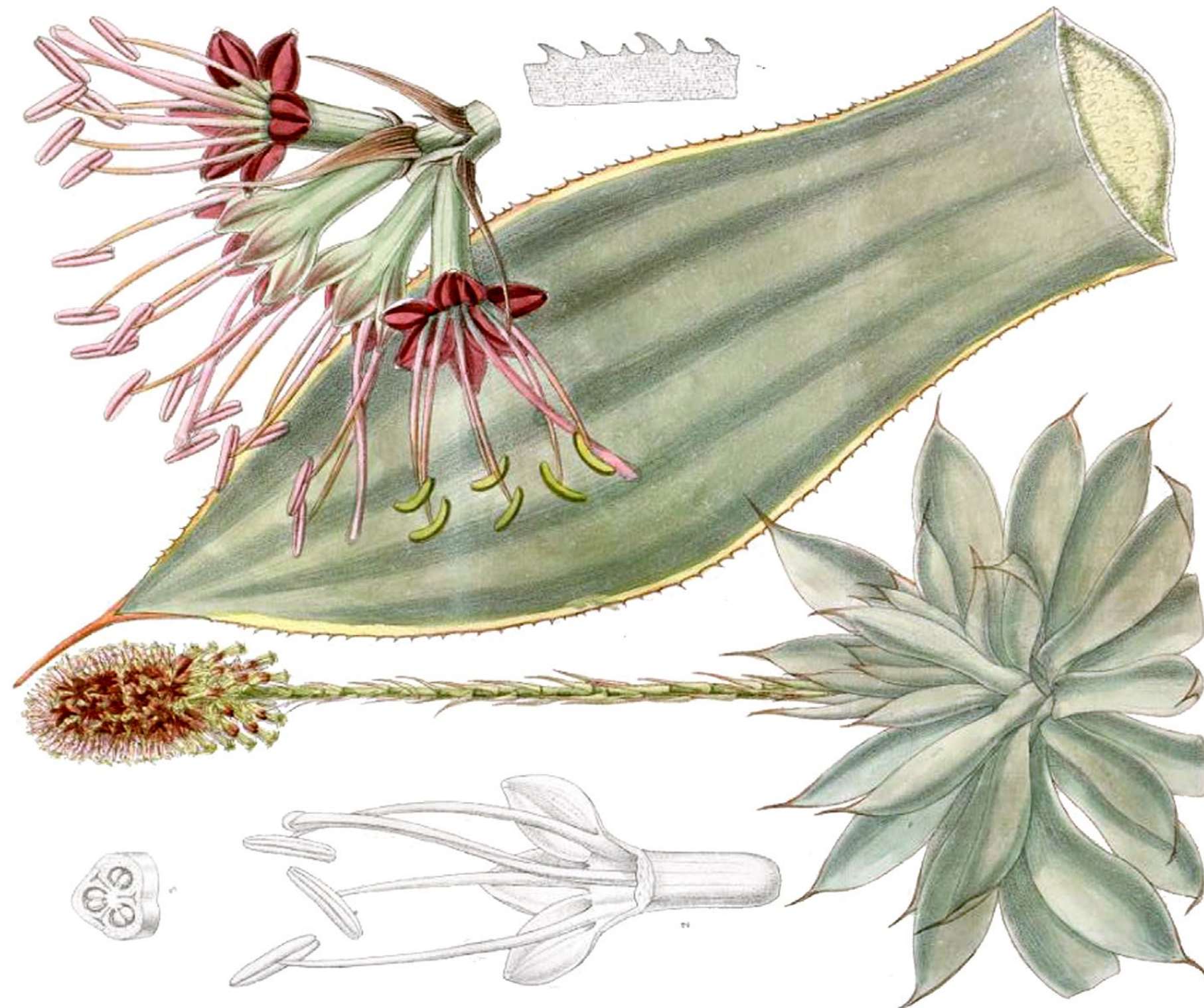
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1842.



Wm. B. Smith del.

Agave albicans

Wm. B. Smith del.

TAB. 7207.

AGAVE ALBICANS.

Native of Mexico.

Nat. Ord. AMARYLLIDÆ. Tribe AGAVEÆ.

Genus AGAVE, Linn. (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 738.)

AGAVE (Littæa) *albicans*; acaulis, foliis 20–30 dense rosulatis oblanceolato-spathulatis carnosio-coriaceis persistenter glaucescentibus, spinâ terninali haud pungente, aculeis marginalibus crebris minutis deltoideis, pedunculo stricto foliis 3–4-plo longiore foliis reductis pluribus scariosis adpressis prædito, floribus in spicam densam oblongam congestis, bractei magnis lanceolatis acuminatis, perianthii segmentis oblongis intus brunneis tubum duplo superantibus, staminibus segmentis 3–4-plo longioribus.

A. albicans, *Jacobi Vers. Syst. Ord. Agav.* p. 137; *Baker in Gard. Chron.* 1887, vol. ii. p. 717, fig. 138]; *Handb. Amaryll.* p. 191.

A. Ousselghemiana, *Jacobi Nachtrag.* p. 156.

A. micracantha, var. *albidior*, *Salm-dyck in Bonplandia*, vol. vii. p. 87.

Of these comparatively soft-leaved tender Agaves, which compose the group called “*Aloidæ*,” only two species, viz. *A. Celsiana*, tab. 4934, and *A. Sartorii*, tab. 6292, have yet been figured in the “Botanical Magazine.” My estimate of the total number of species at present known is thirty, but many of these have been described from very imperfect material and are not known in flower. The present plant is closely allied to *A. micracantha* Salm-Dyck (figured in the “Refugium Botanicum” of Saunders, tab. 327), and scarcely more than a variety of that species in a broad sense. It, was introduced into cultivation about 1860, and if, as I believe, *A. Ousselghemiana*, of the Belgian gardens, is identical with it, was first flowered by Count Kerchove d’Ousselghem in 1867. In England it was flowered by Mr. Justus Corderoy, at Blewbury, in 1887. Our drawing was made from a plant that flowered in the Succulent House at Kew, in May, 1891, and was purchased in 1889 at the sale of the late Mr. J. T. Peacock’s collection of Succulent plants.

DESCR. Acaulescent. *Leaves* twenty to thirty in a dense rosette, oblanceolate-spathulate, twelve or fifteen inches long, three or four inches broad at the middle, narrowed to two or two and a half inches above the dilated base, coinciding with the base of the flower.
DECEMBER 1ST, 1891.

paratively soft and pliable in texture, persistently glaucous on both surfaces, tipped with a soft brownish spine an inch long, closely margined with minute unequal deltoid brownish prickles. *Peduncle* stiffly erect, three or four times as long as the leaves, furnished with copious erect lanceolate-acuminate scariose bract-leaves. *Spike* oblong, one and a half or two feet long, half a foot in diameter when fully expanded; flowers in pairs, subtended by a large lanceolate-acuminate scariose bract. *Perianth*, including the ovary, an inch and a half long, green outside; segments oblong, brown inside, above half an inch long, twice as long as the funnel-shaped tube. *Stamens* three or four times as long as the perianth-segments. *Style* developed after the stamens, finally reaching up to the anthers.—*J. G. Baker*.

Fig. 1, Margin of leaf; 2, a flower cut open; 3, horizontal section of ovary:—*all enlarged*.



(3654)

AGAVE AMERICANA; *var.* foliis variegatis. GREAT
AMERICAN ALOE; with variegated leaves.

Class and Order.

HEXANDRIA MONOGYNIA

(Nat. Ord.—BROMELIACEÆ.)

Generic Character.

Corolla infundibuliformis, basi tubulosa; limbo erecto, 6-partito, æquali. *Stamina* exserta, summo tubi inserta; filamentis longis, subulatis, compressis, stiberectis. *Antheræ* magnæ, lineares, versatiles. *Stylus* filiformis, subtrigonus. *Stigma* capitato-trigonum. *Capsula* oblonga v. obovata, subtrigona, trilocularis, polysperma. *Semina* numerosissima, biserialia, plana.

Specific Character and Synonyms.

AGAVE * *Americana*; foliis dentato-spinosis, scapo ramoso, tubo corollæ medio angustato staminibus corolla longioribus stylo subbrevioribus.

AGAVE *Americana*. Linn. *Sp. Pl.* p. 461. Ruiz et Pav. *Fl. Peruv.* v. 3. p. 66. Humb. et Bonpl. *Nov. Gen.* v. I. p. 238. Andr. *Bot. Rep.* t. 438. Roem. et Sch. *Syst. Veget.* v. 7. p. 722. Spr. *Syst. Veget.* v. 2. p. 78.

Var. β. foliorum marginibus flavis. (*Tab. nostr.* 3654.)

The Aloe, that Patriarch of the Flowers, which “ blooms once in a hundred years, and whose blossoms then are developed with such rapidity, as to occasion an explosion resembling the firing of a cannon,” is the theme of a tale that all have heard from their infancy, arid to which many still give credence. In regard to the age at which the plants flower, that is extremely uncertain, and depends much upon the

* From *αγαυος*, *admirable*, on account of the stateliness and grandeur of this plant.

the health and vigour of the individuals, and the degree of heat to which they have been exposed. Many live to a gnat age, and appear never to flower at all. In warm climates twenty-five or thirty years, and probably, a much -shorter period is sufficient to bring them to perfection. The most remarkable instance on record of the early flowering of the *American Aloe* is that detailed by Mr. HAWKINS in the Transactions of the Horticultural Society, v. 4. p. 389. This took place *in the open ground*, at Woodville. near Salcombe, Devonshire, the residence of the late JAMES YATES, Esq., and considering that the plant is a native of South America, mores especially within the tropics, it tells more for the mildness of that part of England, than any circumstance that could be mentioned. The *Aloe* was planted in 1804, when it was only about six inches high, and when the two or three years old, within a few yards of the sea-shore, yet elevated forty or fifty feet above the level of the water, where it never had any cover, shelter manure or cultivation. In 1812, it was more than five feet high, and it grew during that summer nearly the eighth of an inch daily. In 1820 it measured between ten and eleven feet in height, and covered space, the diameter of which was sixteen feet; its leaves, close to the Stem, being nearly nine inches thick. In the beginning of June of that year, a stem made its appearance, resembling a head of Asparagus, of immense size, which during six weeks grew at the rate of three inches a-day, and then gradually diminished in progress; but not till it had attained the elevation of twenty-seven feet from the ground, which was at about the middle of September. Time two lowest branches first showed flowers on the 3d of September, and others came out in succession from the beginning of October to the end of November, when they all began to lose their colour and to decay. There were upwards of forty flowering bunches, each with between three and four hundred flowers, making in all above sixteen thousand blossoms. As the stem grew, the the leaves began to wither; and it appears the plant then died." "Its age was twenty-one years; the height from the earth when in blossom twenty-seven feet: the lateral branches, beginning at twelve feet from the ground, were in number forty-two, the lowest projecting two feet from the stem, and gradually diminishing to about a foot or nine inches in length at the top: the stalk where the side branches commenced was twenty inches round, or near seven inches in diameter, gradually tapering to the apex: the bunches of flowers (or at least those next the bottom) were from a tot to fourteen inches in breadth."

Although

Although various Instances are on record of this plant having blossomed when confined in a pot or tub, and sheltered from the severity of our climate, yet the occurrence is so rare, as to excite a great deal of interest in the neighbourhood where such an event takes place; and I know not whether the variegated-leaved variety, which is not uncommon in collections, blossoms with equal readiness; not having myself heard of the flowering of that kind, till that which is here represented threw up its flowering stem in the summer of 1836, at Aiken Head, the seat of Mrs. GORDON, where, the garden is under the management of Mr. LAMBIE. In this instance, the whole height of the flower-stalk, was only the half of that. Of Mr. YATES: and the blossoms were few indeed in comparison; yet they came to great perfection, and the plant made a very noble appearance.

But the great size and strange form of this plant, and the rarity of its blossoming in our collections, are not the only circumstances which recommend the *American Aloe* to attention. It yields a drink, and a fibre of such extensive use in the New World that it is reckoned, next to the Maize and the Potato, the most valuable of all the products which nature has lavished on the mountain-population of æquinoctial America: and no where perhaps is it held in greater esteem than Mexico, according to M. de HUMBOLDT, from whose "Essai politique sur le Royaume de la Nouvelle Espagne," I extract the following interesting particulars, bearing on this subject.

"Scarcely," says this distinguished Philosopher, "does there exist a tribe of savages in the world, who are not acquainted with the art of preparing some kind of vegetable drink. The wretched hordes which wander in the forests of Guiana, extract from the fruits of different Palms, a beverage, which is as palatable as the European orgeat. The inhabitants of Easter Island, confined to a mass of barren, springless rocks, mingle the expressed juice of the Sugar Cane with the briny water of the sea. Most civilized nations derive their drink from the same plants as afford them food, and whose roots and seeds contain the saccharine principle mingled with farinaceous. In the Southern and Eastern Asia this is Rice; in Africa and Australia the roots of Ferns, and of some Arums; while in the North of Europe, the Cerealia afford both bread and fermented liquors. Few are the instances of certain plants being cultivated solely with a view to extract beverages from them. Vineyards only exist west of the Indus; in the Old World, and in the golden age of Greece, the culture of the Grape was confined to the countries lying between the Oxus and the Euphrates, in Asia tinor, and in Western Europe. In other parts of the world, nature certainly produces several species of Wild Vine; but no where has man attempted to collect, them around them, and improve their quality by cultivation.

The New Continent presents the instance of a people who derived their drinks not only from the farinaceous and sugary substance of *Maize*, *Manioc*, and *Bananas*, or from the pulp of some species of MIMOSA, but who cultivated a plant. of the *Pine Apple* family for the express purpose of converting its juice into a spirituous liquor. In the vast plains in the interior of Mexico, there are huge tracts of country where the eye discerns nothing but fields planted with the *Pittes* or *Maguay* (AGAVE *Americana*). This plant, with its leathery and thorny leaves, and which, with the CACTUS *Opuntia*, has become naturalized

naturalized ever since the sixteenth century, throughout Southern Europe, in the Canary Islands, and on the African coasts, imparts a most peculiar character to the Mexican landscape. What can be more strongly contrasted than a field of yellow *Wheat*, a plantation of the glaucous AGAVE, and a grove of *Bananas*, whose lustrous leaves always preserve their own tender and delicate hue of green! Thus does man, in all latitudes, by introducing and multiplying the various vegetable productions, modify at his pleasure the aspect of the country around him!

“In the Spanish colonies there are several sorts of *Maguay* deserving of careful cultivation; some indeed, which, by the length of the stamens, the mode of division of the corolla, and form of the stigma, may, perhaps, belong to separate genera. The *Maguay* or *Metl*, which is grown in Mexico, consists of several varieties of the *American Aloe* (AGAVE *Americana*), so common in gardens, which has yellow, fascicled, and straight flowers, with stamens twice as long as the divisions of the corolla. This must not be confounded with the *A. Cubensis* of JACQUIN, (*A. Mexicana*, LAMARCK, *A. odorata*, PERSOON,) which has been erroneously supposed to be the *Metl* or *Maguay* of Mexico, but which is extensively grown in the Caraccas, where it is called *Maguay de Cocuy*.

“These plantations extend wherever the Aztèque language is spoken; they cease to the north of Salamanca, and are seen in the greatest luxuriance in the valley of Toluca and the plains of Cholula. There the AGAVE plants are set in rows, distant fifteen decimètres from one another. The juice or sap, commonly called the *honey*, from its abundant sweetness, is only afforded when the flowering-stem is about to appear, so that it is of great importance to the cultivator to ascertain precisely this period. Its approach is indicated by the direction of the root-leaves, which the Indian always watches and examines with great attention, and which, formerly recurved, suddenly take an upward direction, and approximate as if to enclose the incipient flower-stalk. The bunch of central leaves (*corazon*, the *heart*) next assumes a livelier green, and lengthens considerably; indications which the natives assure me hardly ever fail, and to which may be added several other less striking appearances in the general aspect of the plant. Daily does the cultivator examine his AGAVE plantations, to watch those individuals which promise to bloom, and if he himself entertains any doubt, he appeals to the village sages, the old Indians, whose long experience gives them an unerring precision both of touch and eye.

“At eight years old, or thereabouts, the Mexican AGAVE generally shows signs of inflorescence, and then the collection of the juice for making *Pulque* begins. The bunch of central leaves, or *corazon*, is cut through, the incision gradually enlarged and covered by the side leaves, which are raised up and tied together at their tips. In this cleft the sap of those parts which were destined to form and nourish the gigantic flowering-stem is deposited, and this vegetable spring flows for two or three months, and may be tapped three times a day. The quantity of sap is enormous, and the more surprising, as the AGAVE plantations are always made by choice on the most sterile soil, frequently on mere shelves of rock, scantily covered with vegetable earth. Each plant is calculated to yield about one hundred and fifty bottles; and at Pachuca, the value of a *Maguay*, near flowering, is from twenty to twenty-five francs,

francs, or five piastres. Still, as with the Vine, which may bear a greater or less quantity of grapes, the produce is apt to vary, and cannot be precisely calculated. Instances have, however, been known, of a parent bequeathing a plantation of *Maguay* worth from seventy to eighty thousand piastres.

“The cultivation of the AGAVE is attended with many real advantages above that of *Maize*, *Wheat*, or *Potatoes*, as this sturdy, harsh, and fleshy leaved plant is uninjured by the occasional drought, frost, and excessive cold, which prevail in winter on the lofty Cordilleras of Mexico. It dies after having flowered, or when the central bunch of leaves is cut away, and then a number of suckers spring from the parent root, which increase the plant with extraordinary rapidity. One acre of ground will contain from twelve to thirteen hundred plants of *Maguay*, of which it may be calculated that one in every thirteen or fourteen is always affording the honey. Thus the proprietor who sets from thirty to forty thousand *Maguays* is sure of leaving his family rich; though a man must possess patience and resolution to devote himself to cultivating what only becomes productive after an interval of fifteen years. In good soil, the AGAVE blossoms at the end of five years; while in poor ground nothing can be expected under eighteen years; and any artificial means by which the flowering state is unnaturally accelerated, only destroy the plant prematurely, or materially lessen the amount of sap.

“The *honey*, or juice, is of an agreeably bitter-sweet flavour, and ferments readily from the sugar and mucilage with which it abounds, this process being hastened by the addition of some old and acid *pulque*. This vinous liquor resembles cider, but diffuses a disgusting smell of decayed meat, which Europeans have some difficulty in overcoming. Those, however, who have accustomed themselves to the beverage, consider it as strengthening, stomachic, and particularly nutritive, recommending it, peculiarly, to persons of a very meagre habit; and I have seen many whites, who, totally discontinuing water, beer, and wine, drink only the *Pulque*, like so many Mexicans. The cause of the fetid smell of this liquor is variously attributed to the mode of preparation, the manure used for the soil, and the different materials in which the fermentation is carried on; and I only regret, that I was unable, for want of proper apparatus, to ascertain this curious point in vegetable chemistry. By distillation, a most intoxicating spirit is obtained from *Pulque*, which is called *Mexical*, or *Aguardiente* (Fire-water) of *Maguay*. The plant which is preferred for this purpose, appeared to me smaller, and its foliage more glaucous than the common kind; but not having seen it in blossom, I cannot pronounce it to be specifically distinct.

“But not only is the AGAVE the Mexican Vine, but it holds the place of Asiatic Hemp and the *Egyptian Paper-Reed*, (*Cyperus Papyrus*). The antient manuscripts of this country consisted of hieroglyphics, often inscribed on a paper made of numerous layers of the AGAVE leaf, macerated in water, and glued together in the same manner as the pith of papyrus and the bark of the *Paper Mulberry* (*Broussonetia*) of the Pacific isles. I brought away many antient specimens of this fabric, some as thick as pasteboard, others as thin as fine India paper, which are the more interesting, as all the Mexican records hitherto discovered and still preserved at Rome and in Spain, are inscribed on the skins of the Mexican Deer. No thread is so much prized by physicians in Europe

Europe as that which is extracted from AGAVE leaves, which are sometimes ten feet long, fifteen inches wide and eight thick, because it is not liable to twist; though the fibre of the New Zealand Flax (*PHORMIUM tenax*) excels it in tenacity. Twine, thread, and rope are made of it; the latter is employed in the mines, and, on the western coast, for rigging the ships. The common juice of the plant, or that which it yields when not about to blossom, is highly caustic, and useful for cleansing wounds; while the thorny points of the leaves, like those of the CACTUS, used to serve the Indians for nails and needles. The Mexican priests were accustomed to inflict wounds in that manner on their breasts and arms by way of expiation, as do the Buddhists in Hindostan."

Rarely as the *American Aloe* blossoms in this part of Europe, a friend of mine, who lately visited the shores of the Mediterranean in the North of Spain, tells me, that the brown withered flowering stems often stand there as tall, strong, and thick as the masts of small vessels in a harbour, and are sometimes used for thatching. The height of this stalk varies from twenty to forty feet, and expands like a rich candelabrum, its arms clustered with golden yellow flowers. An extract from the foliage, when made into balls, will lather water like soap; and, finally, the centre of the flower-stalk cut longitudinally is by no means a bad substitute for the European razor-strop, owing to minute particles of silex forming one of its constituents, in the same way as the *Dutch Rushes*, or stems of the *Horsetail* (*EQUISETUM*) are employed to polish ivory and brass. My friend, WILLIAM CHRISTY, Esq., when writing from Guernsey last autumn (1837) says," in this delightful climate, an AGAVE *Americana* is just coming into flower, in the street of St. Pierre Port. It is twenty-five years old, and already thirty feet high; and has always stood in the open air, summer and winter, without any protection."

DESCR. Leaves radical, imbricated at the base, spreading on all sides, sword-shaped, rigid, flat or slightly grooved above, convex beneath, very acute, glaucous-green, sometimes, as in our variety, bordered with yellow, the margin toothed with short, strong spines, mucronate at the point: they are from four to six feet long. *Scape* from twelve (in our specimen) to twenty and even forty feet high, erect, bearing a panicle of innumerable flowers in dense clusters. *Perianth* yellow-green, the *tube* for the greater part of its length incorporated with the germen, above which is a constriction; *limb* deeply cut into six linear-oblong, erect, obtuse segments. *Filaments* inserted on the short, free portion of the tube, just below the segments, and opposite to them; subulate, much exserted, a little compressed. *Anthers* linear, versatile, deep yellow. *Style* filiform, sometimes about as long as the stamens, sometimes much shorter than they are: *Stigma* capitate, three-lobed: *Germen* obscurely triquetrous, three-celled, the cells many-ovuled.

The principal figure represents the AGAVE *Americana* from the garden at Aiken Head, reduced one twenty-fourth part of the *nat. size*.—Fig. 1. A Flower. 2. The same laid open. 3. Germen cut through transversely: of the *nat. size*.

TAB. 7890.

AGAVE Bakeri.

Native of Mexico ?

Nat. Ord. AMARYLLIDÆ.—Tribe AGAVÆ.

Genus AGAVE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 738.)

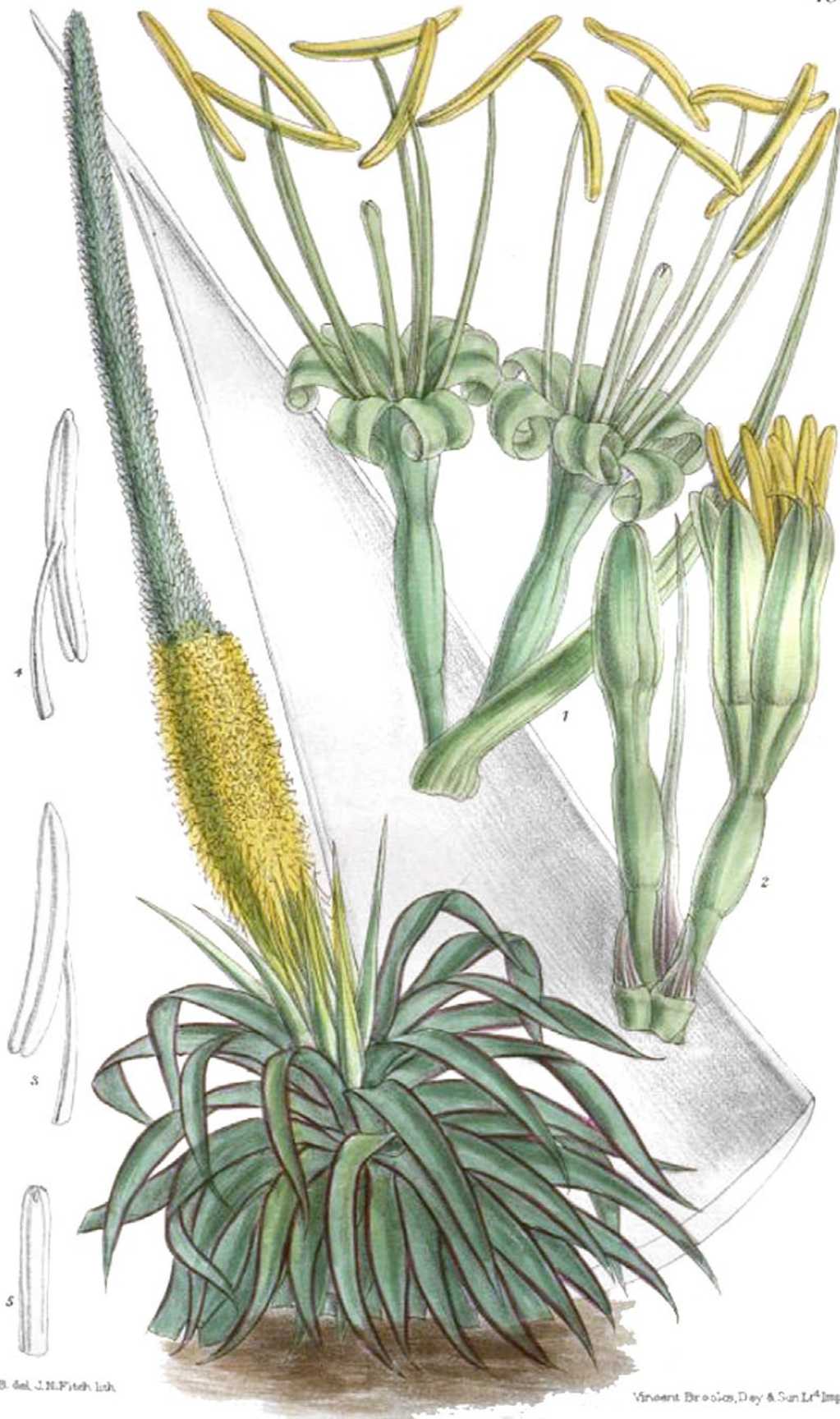
AGAVE (*Litæa*) *Bakeri*; trunco 4-pedali, basi nudo coma 6 ped. diam. e foliis plurimis densissime confertis confecta, foliis 3 ped. longis undique patentirevolutis medio 5 poll. latis loriformi-lanceolatis haud crassis basi angustatis supra planiusculis subtus leviter convexis spina pollicari terminatis, marginibus lævibus purpureis, pedunculo brevi crasso foliis junioribus brevibus erectis cincto, racemo 8–9-pedali stricto erecto cylindraceo, floribus densissime confertis, bracteis floribus æquilongis e basi ovata rubro striata anguste linearibus, bracteolis triangularibus membranaceis rubro striatis pedicellos crassos $\frac{1}{2}$ -pollicares æquantibus, ovariis pollicaribus lineari-obongis teretibus, perianthii tubo ovario æquilongo obconico 6-sulcate, lobi pollicaribus lineari-oblongis obtusis revolutis extus viridibus intus albo-viridibus fascia media saturatiore pictis, filamentis 2-pollicaribus albis, antheris pollicaribus anguste linearibus aureis, stylo filamentis brevior apice subclavellato 3-lobulato.

A. Bakeri, Hook. f., ex W. Watson in *Garden*, 1902, vol. i. p. 240, cum ic. reduct.

A very distinct species of Agave, purchased for the Royal Gardens, Kew, at the sale of the late Mr. Peacock's noble collection of Cactuses, Aloes, and Agaves in 1889, with no indication of its native country or collector. It flowered in the Mexican division of the Temperate House in January to March, 1902. I have named it after my friend, J. G. Baker, Esq., F.R.S., F.L.S., late Keeper of the Herbarium of the Royal Gardens, Kew, author of the Handbooks of the Amaryllideæ, Irideæ, Bromeliaceæ, and of other works that have been of signal service to Botanists and Horticulturalists.

Descr.—*Trunk* about four feet high, stout, erect, bearing an elongated crown six feet in diameter, of very numerous, spreading and recurved leaves, and a very shortly peduncled, dense-flowered cylindrical raceme of nearly nine feet high. *Leaves* three feet long by five inches broad at the middle, narrowed towards the base, terminated by a spine an inch long, glaucous-green, with a quite entire, narrow, purple margin, coriaceous, slightly concave above, and convex beneath; young leaves erect, crowded round,

APRIL 1ST, 1903.



and concealing the peduncle and base of the raceme. *Raceme* strict, columnar, golden-yellow from the number and size of the anthers. *Bracts* as long as the flowers, tapering from a broad, pale green, striate base to a very slender, almost filiform tip; bracteoles half an inch long, triangular-ovate, about as long as the very stout pedicels, membranous, white, streaked with red. *Ovary* an inch long, narrowly oblong. *Perianth-tube* as long as the ovary, infundibular, six-grooved; segments an inch long, linear-oblong, revolute, tip rounded, dorsally green, very pale, almost white within, with a median, darker green band down the middle. *Filaments* two inches long; anthers an inch long, very narrowly linear, bright yellow. *Style* shorter than the filaments, tip obscurely three-lobed.—*J.D. H.*

Figs. 1 and 2, flowers of the *natural size*, with bracts and bracteoles; 3 and 4, anthers; 5, apex of style:—*enlarged*.

TAB. 5940.

AGAVE BESSERIANA.

Tropical America.

Nat. Ord, AMARYLLIDÆ.—Tribe. AGAVÆ.

Genus AGAVE, Linn.; (Endl. Gen. Plant., p. 181).

AGAVE *Besseriana*; subcaulescens, foliis 3–6-pollicaribus anguste elliptico-lanceolatis crassissimis rigidis rectis viridi-glauciscentibus, supra lente subtus valde convexis, spina terminali valida elongata marginalibusque remotis uncinatis brunneis, vagina semilunari lamina latiore, bracteis parvis sparsis triangulari-ovatis acutis scapo valido multoties angustioribus inferioribus e basi lanceolata subulatis, floribus paucis racemosis erectis 2-pollicaribus viridibus, perianthii tubo subcylindrico lobis lingulatis erectis obtusis crassis longiore, antheris perianthii segmentis subæquilongis exsertis erectis aurantiacis, stigmatibus obscure lobato.

AGAVE *Besseriana*, Jacobi in *Hamburg Garten-und-Blumen-Zeitung*, 1865, p. 155.

The *Botanical Magazine* has no higher function than that of figuring such plants as are rarely known to flower in this country, and are so difficult of preservation for scientific purposes, or for future identification, that but for good coloured plates they can scarcely ever be recognised. This remark applies especially to Agaves, of which fifteen species have now been illustrated in this work, a very small proportion of the number supposed to exist in European collections. Of these upwards of one hundred are enumerated by Major General Jacobi's "Versuch zu einer systematischen Ordnung der Agaveen" (Ottos Hamburger Garten-und-Blumenzeitung, 1864), of which, however, comparatively few have been described from flowering specimens, and many may consequently prove to be mere forms.

A. Besseriana flowered in spring of the present year, in the unique collection of W. Wilson Saunders, Esq., at Hillfield, DECEMBER 1ST, 1871.



Reigate, who has kindly communicated his own drawings, notes, and analysis for insertion in the Magazine; its native country is unknown, but probably Mexico. It was procured from Belgium under the name of *A. Besseriana hystrix*, and agrees with Jacobi's description in every detail.

DESCR. *Stemless*. *Leaves* thirty to forty in a dense rosette, five to six inches long, two thirds to three-quarters of an inch broad about the middle, narrowly elliptic-lanceolate, gradually contracted into a rigid brown spine an inch long, contracted at the base, and suddenly dilated into a broad semilunar sheath, upper surface slightly convex except towards the tip, under very convex; colour pale glaucous-green; marginal spines one-twelfth to one-tenth of an inch, upcurved, distant, brown. *Scape* two feet three inches high, stout, stiff, sparsely bracteate; lower bracts erect, one inch long, subulate from a lanceolate base, upper triangular, acute, small; all much narrower at their base than the scape. *Flowers* about ten, two to two and half inches long excluding the large anthers, solitary or geminate; peduncle half an inch long, with two or three minute bracteoles, and a triangular basal bract. *Perianth-tube* one and a half inches long, terete, narrowly urceolate, 6-furrowed at the top, dark green; lobes erect, half an inch long, narrowly tongue-shaded, obtuse, convex, contracted at their insertion; green on both surfaces, tinged with brown towards the tips. *Filaments* yellow-green, subulate, erect, rather longer than the perianth-lobes; anthers linear, rather shorter than the filaments, orange-yellow.—*J. D. H.*

Fig. 1. Whole plant:—*reduced*; 2, leaf and 3, inflorescence:—*of the natural size*.

TAB. 6248.

AGAVE BOTTERI.

Native of Mexico.

Nat. Ord. AMARYLLIDACEÆ.—Tribe AGAVEÆ, Linn.

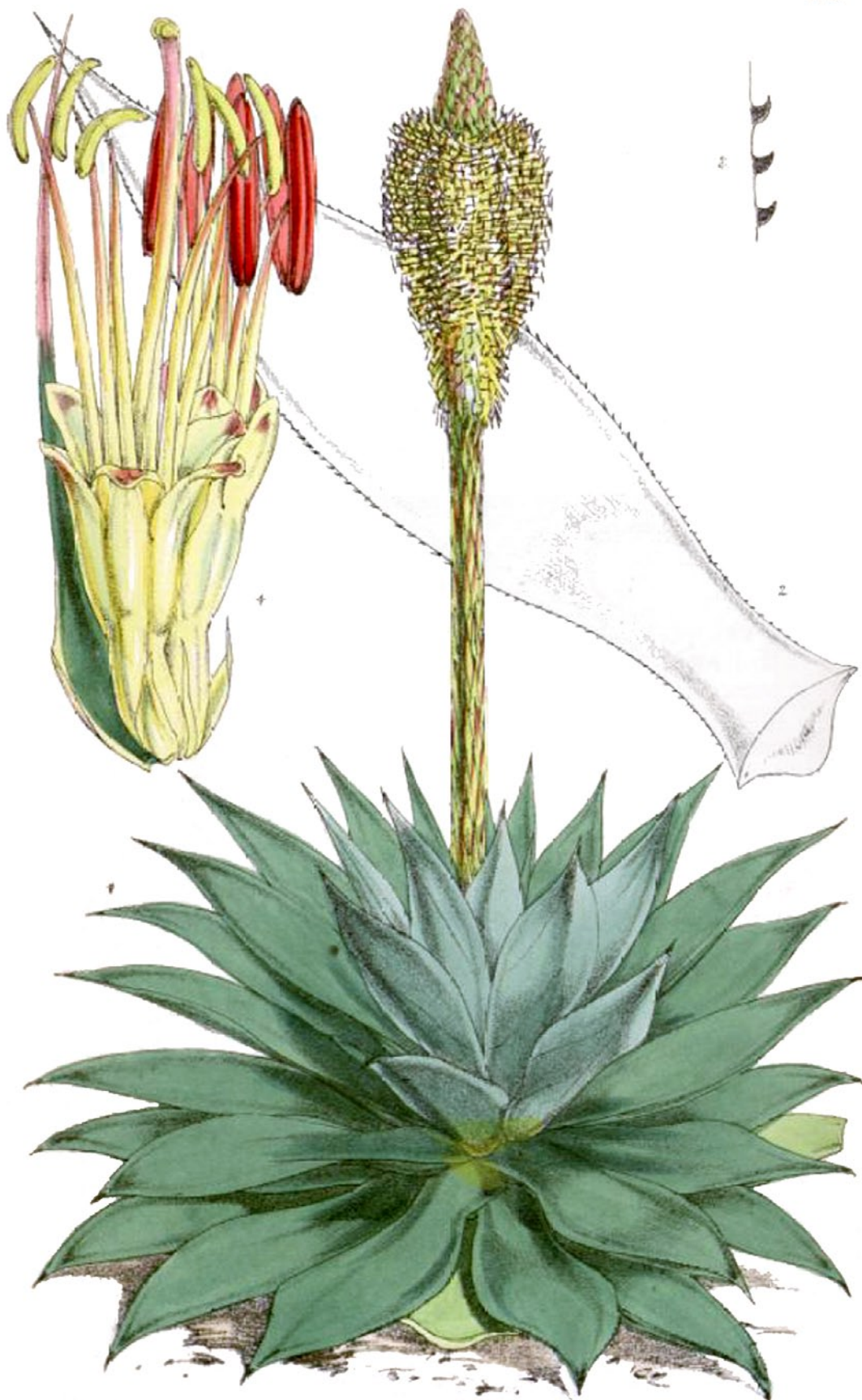
AGAVE, (*Jacobi in Hamburg Gartenzeitung*, vols. xx et seq.)

AGAVE (*Littæa*) *Botterii*; acaulis, foliis 40–50 oblongo v. oblanceolato-spathulatis coriaceo-carnosis pallide vix glauco-viridibus medio poll. crassis facie concavis, apice in spinam atram pungentem productis margine dentibus deltoideis corneis fusco-nigris crebris antrorsum falcatis armatis, scapo robusto 4-pedali, floribus geminis in spicam magnam cylindricam confertis, bracteis lanceolatis cuspidatis, bracteolis lanceolatis parvis, perianthio viridulo infundibulari bipollicari tubo ovario brevior, segmentis oblongo-lanceolatis diu ascendentibus, genitalibus perianthio subduplo longioribus.

This plant was sent a long time ago from Mexico by M. Botteri to Mr. Wilson Saunders, and I knew it for many years in the Reigate collection. When this was dispersed it was purchased by Mr. J. T. Peacock, with whom it flowered, at Sudbury House, Hammersmith, in the spring of 1875. I have not been able to refer it to any of the species described in the elaborate monograph of the late General Von Jacobi. It is a *Littæa* as regards inflorescence, and, according to his classification, founded on characters, falls into the group “Subcoriaceæ,” which combines the small teeth of the “Al-oideæ,” with a much thinner leaf, with the firmer texture of the large-spined paniced species of the series of which *A. americana* and *Scolymus* are best known representatives. Its nearest neighbours are *A. densiflora*, Hook. in Bot. Mag., t. 5006, the plant called *A. Keratto*, by Salmdyck and Jacobi (which is not the original *Keratto* of Miller), and *A. xalapensis*, Roezl; Jacobi Monog., 72, which I cannot distinguish from *A. polyacantha* “Haworth,” K. Koch; but in all these the leaves are at least five or six times as long as broad, oblanceolate, not oblanceolate-oblong.

DESCR. *Leaves* 40–50 in a sessile rosette, oblanceolate-or oblong-spathulate, two feet long, six to eight inches broad above the middle, narrowed gradually to a pungent dark-coloured channelled spine half an inch long, and downwards to a breadth

B



of 4–5 inches above the dilated base, one eighth of an inch thick in the centre, rigidly coriaceous in texture, concave on the face, pale green and hardly at all glaucous when mature, the margin armed with close deltoid upcurved horny teeth about one eighth of an inch long. *Scape* stout, twice as long as the leaves, hidden by the adpressed linear bract-like leaves. *Inflorescence* a dense spike, longer than the leaves; flowers in pairs; primary bracts lanceolate, with a long cusp; bracteoles small, lanceolate. *Ovary* oblong. *Perianth* green, funnel-shaped, two inches long, with a distinct funnel-shaped tube half an inch long; segments oblong-lanceolate, permanently ascending, nearly an inch long. *Stamens* inserted near the throat of the tube; filaments subulate two and a half inches long; anthers red, an inch long. *Style* three and a half inches long, stigma capitate.

J. G. Baker.

Fig. 1. The whole plant, *much reduced*; 2, a single leaf, *much reduced*; 3, portion of the edge of the leaf, with teeth, *natural size*; 4, pair of flowers, with bract and bracteoles, *natural size*.

TAB. 7558.
AGAVE BOUCHEI.
Native of Mexico.

Nat. Ord. AMARYLLIDÆ.—Tribe AGAVÆ.

Genus AGAVE, Linn.; (*Benth. & Hook. f. Gen. Plant*, vol. iii. p. 733.)

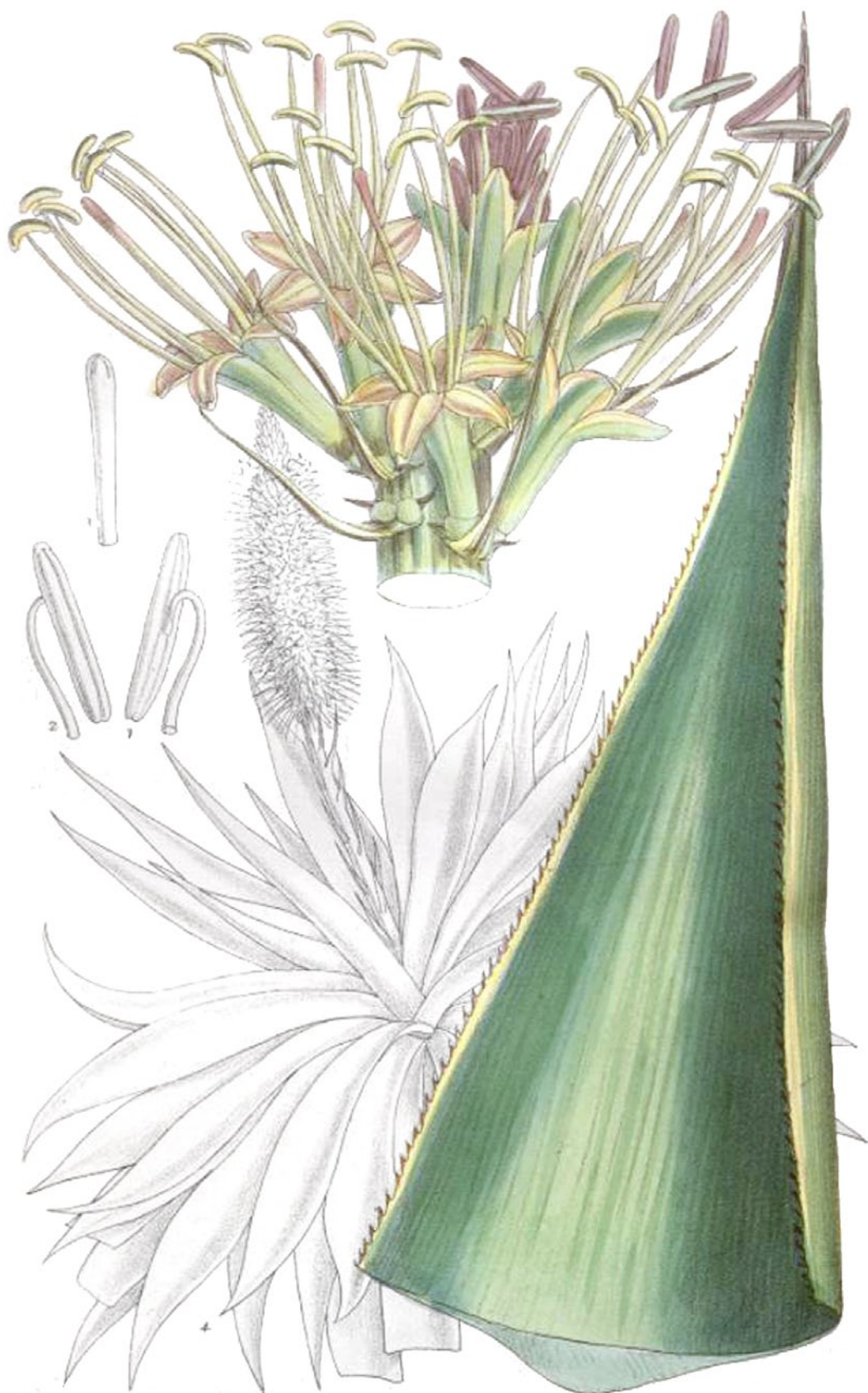
AGAVE (Littæa) *Bouchei*; candice brevi cylindrico polycarpico, foliis 30–40 dense rosulatis oblongo-lanceolatis facie concavis adultis utrinque viridibus junioribus leviter glaucescentibus spinâ brevi vix pungente terminatis, spinulis marginalibus crebris minutis deltoideis castaneis, pedunculo valido brevi, floribus geminis in spicam densam aggregatis, bracteis linearibus elongatis, bracteolis parvis deltoideis, ovario oblongo, perianthii tubo brevi late infundibulari, lobis oblongis, filamentis lobis quadruplo longioribus, antheris linearibus, fructu parvo oblongo.

A. Bouchei, Jacobi, *Monogr. Agave*, p. 120. Baker in *Gard. Chron*, 1877, p. 717; *Handb. Anmaryllid.* p. 191.

This Agave is one of the few species that have a firm, woody trunk, and do not die after flowering. It belongs to the group called *Carnoso-coriaceæ*, in which the leaves are less rigid and more fleshy than in the best-known species of the genus, such as *A. americana* and *rigida*, and which are much less frequent in cultivation. The present plant was introduced into the Berlin Botanic Garden in 1861, and after it had flowered in 1864 was named by General Jacobi in compliment to Inspector Bouché. It has been in the Royal Garden at Kew for at least twenty years, but has never flowered till the summer of 1896.

Descr.—*Peduncle* stout, woody, polycarpic, nearly as long as the leaves, bearing in the Kew plant, two rosettes of leaves crowded at its apex. *Leaves* thirty or forty in a dense rosette, oblong-lanceolate, rather fleshy in texture, a foot and a half or two feet long, three or four inches broad at the middle, concave all down the face, a sixth of an inch thick in the centre, green on both surfaces when mature, slightly glaucous when young; end spine short and weak; marginal teeth very small, crowded, deltoid, red-brown. *Peduncle* short and stout. *Spike* dense, two feet long in the Kew plant; flowers in pairs, subtended by a long bract, and a pair of small bricteoles. *Perianth*

OCTOBER 1ST, 1897



greenish-yellow, an inch and a half long, including the ovary; tube short; lobes of the limb oblong. Stamens inserted at the throat of the perianth-tube, two inches long; anthers linear, half an inch long. *Style* finally overtopping the anthers. *Capsule* small, oblong.—*J. G. Baker.*

Fig. 1, Back view of anther; 2, front view of anther; 3, apex of style, *all enlarged*; 4, whole plant, *much reduced*.

TAB. 8581.
 AGAVE BRACTEOSA.

Northern Mexico.

AMARYLLIDACEÆ. Tribe AGAVEÆ.

AGAVE, Linn. Benth. et Hook. f. *Gen. Plant.* vol. iii. p. 788; Baker, *Handb. Amaryll.* p. 188.

Agave bracteosa, S. Wats. ex Engelm. in *Gard. Chron.*, 1882, vol. xviii. p. 776, fig. 188-189; S. Wats. in *Proc. Amer. Acad.* vol. xviii. p. 162 (1883); Baker, *Handb. Amaryll.* p. 192; Hemsl. in *Biol. Centr.-Amer.* vol. iii. p. 340; species *A. pruinosa*, Lemaire, affinis, sed planta acaulescente foliisque e basi dilatata ad apicem gradatim attenuatis differt.

Frutex; acaulescens. *Folia* circiter 50 rosulatum disposita, e basi 6 cm. lat et 1.5 cm. crassa ad apicem longe acuminatum gradatim attenuata, 60 cm. longa, supra basin 3.5 cm. lata, primum sursum curvata, demum valide decurva, plano-convexa, marginibus tenuibus minute denseque albo-dentatis, subscabrida. *Pedunculus* 12 dm. altus; bracteae plures, subulatae, recurvatae, ad 15 cm. longae; spica 60 cm. longa, densiflora. *Perianthum* viride, segmentis albo-marginatis; tubus brevissimus; segmenta ovato-oblonga, obtusa, patentia, 12 mm. longa, 7 mm. lata. *Filamenta* filiformia, alba, 6 cm. longa; antherae oblongae, luteae, 8 mm. longae. *Ovarium* fusiforme, viride, 15 mm. longae, 5 mm. diametro; stylus albus, stamina demum paulo superans; stigma punctiforme. *Capsula* oblonga, obtusa, 2 cm. longa. — C. H. WRIGHT.

The *Agave* which forms the subject of our illustration is a very distinct species belong to the section *Littaea* which differs from *A. pruinosa*, Lemaire, where the leaves are also finely dentate, in having the leaves gradually tapered upwards from a short thickened base, whereas in *A. pruinosa* the leaves are oblong-ob lanceolate, and are four inches broad or broader above the middle, but contract to two and a half inches or less just above the base. When first described *A. bracteosa* was believed to have about fifteen leaves in its rosette, but under cultivation the plants have developed many more. *A. bracteosa* was discovered by Dr. E. Palmer about fifteen miles from Monterey the province of Nuevo Leon in Northern Mexico, and was introduced by him to the Harvard Botanic Garden, where it flowered for the first time in 1881. It was met with again by Mr. Pringle in the same district in June 1889, growing on 'dry calcareous mountain walls.' The plant from which the material for our

OCTOBER, 1914.

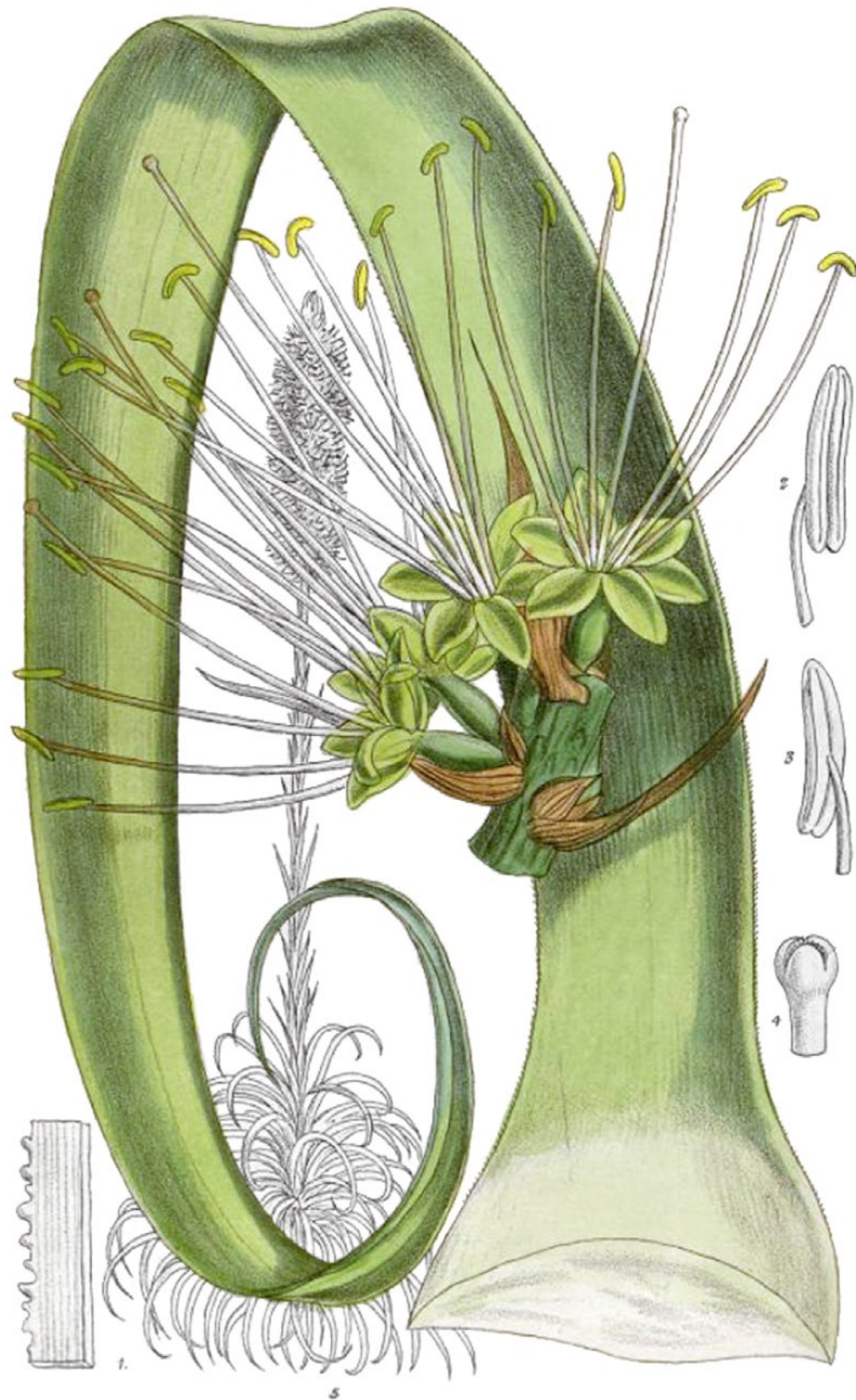


figure has been obtained was received at Kew in 1888 from the Botanic Garden at Washington. It flowered here for the first time in the Succulent House in July 1910, and a second plant of the same batch has flowered in the same month in 1914. Before perishing the 1910 plant matured seeds from which a supply of seedlings have been raised. The facies of this species renders it very distinct among the Agaves; the younger leaves show a strong sigmoid upward curve; afterwards they become strongly decurved. Another *Agave* with a somewhat similar appearance is *A. yuccaefolia*, DC., figured at t. 5213 of this work. This species differs, however, from *A. bracteosa* in having a short stem. Its yellow filaments, flushed with red, are much shorter in proportion to the size of the perianth than is the case in *A. bracteosa*.

DESCRIPTION.—*Shrub*; almost stemless, *Leaves* about 50 in a basal rosette, $2\frac{1}{2}$ in. wide and $\frac{2}{3}$ in. thick at the base, just above the base abruptly narrowed to $1\frac{1}{4}$ in., thence gradually tapering to a long acuminate tip, at first curved upwards, at length strongly decurved. plano-convex, the thin margins closely and finely white-denticulate, rather scabrid. *Pole* 6 ft. high, the peduncle 4 ft. long, the spike 2 ft. long; bracts numerous, subulate, up to 6 in. long, recurved; spike dense-flowered. *Perianth* green, segments white-margined, ovate-oblong, obtuse, spreading, $\frac{1}{2}$ in. long, $\frac{1}{4}$ in. wide; tube very short. *Filaments* filiform, white, $2\frac{1}{4}$ in. long; anthers oblong, yellow, $\frac{1}{3}$ in. long. *Ovary* fusiform, green, $\frac{2}{3}$ in. long, in wide; style white, ultimately rather longer than the stamens; stigma minute. *Capsule* oblong, obtuse, $\frac{3}{4}$ in. long.

Fig. 1, portion of leaf-edge; 2 and 8, anthers; 4, Stigma; 5, sketch of an entire Plant:—*all enlarged except 5, which is much reduced.*

AGAVE CELSII.

Cels's Agave.

Nat. Ord. AMARYLLIDÆ.—HEXANDRIA MONOGYNIA.

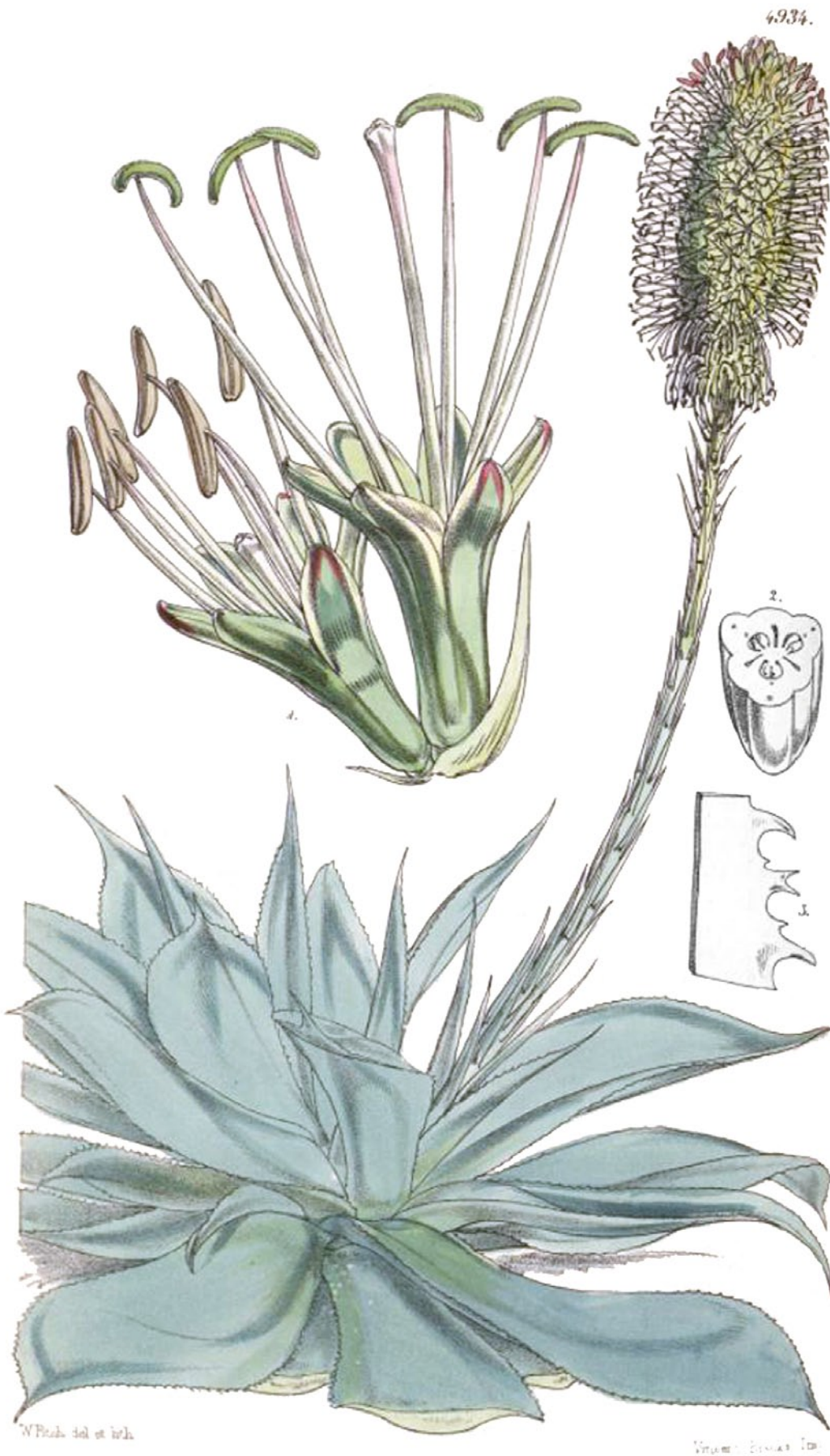
Gen. Char. *Perigonium* corollinum, superum, infundibuliforme, persistens, limbi sexpartiti laciniis subæqualibus. *Stamina* 6, tubo perigonii inserta; *filamenta* filiformia, æstivatione inflexa, sub anthesi exserta; *antheræ* lineares, versatiles. *Ovarium* inferum, triloculare. *Ovula* plurima, in loculorum angulo centrali biseriata, horizontalia, anatropa. *Stylus* filiformis, exsertus, cavus, apice pervius; *stigma* capitato-trigonum. *Capsula* coriacea, trigono-triquetra, trilocularis, loculicido-trivalvis. *Semina* plurima, plano-compressa; *testa* chartacea, marginata; *raphe* laterali, umbilicum prope basin lateralem *chalazæ* subapicali jungente. *Embryo* cylindricus, axilis, albuminis carnosi longitudine, extremitate radicali umbilicum spectante.—*Herbæ acaules v. caulescentes, interdum giganteæ, longævæ, sed semel florentes, in America tropica et subtropica cis æquatorem indigenæ, quædam nunc a mortalibus late diffusæ; foliis radicalibus carnosis, interdum maximis, marginibus spinosis; floribus in scapo radicali bracteato paniculatis, numerosissimis. Endl.*

AGAVE *Celsii*; acaulis, tota glauca, foliis (bipedalibus) obovato-lanceolatis valde sed brevi anguste acuminatis inæqualiter dentatis dentibus rectis curvatisve simplicibus v. furcatis, scapo (4-pedali) toto bracteato bracteis inferioribus subfoliiformibus superioribus sensim magis subulatis, spica oblonga multiflora, floribus subgeminis, perianthio infundibuliformi (viridi) crassiusculo, limbi laciniis ovatis acutis, filamentis styloque perianthio plus quam duplo longioribus.

This fine *Agave* was received many years ago from the garden of M. Cels, at Paris, as an unknown species, and equally unknown as to its native country—probably Mexico. It does not appear to be anywhere described, but is distinguished from every other with which we are acquainted by its singularly glaucous foliage, more resembling that of some *Aloe* than an *Agave*. It flowered in May and June of the present year, for the first time with us.

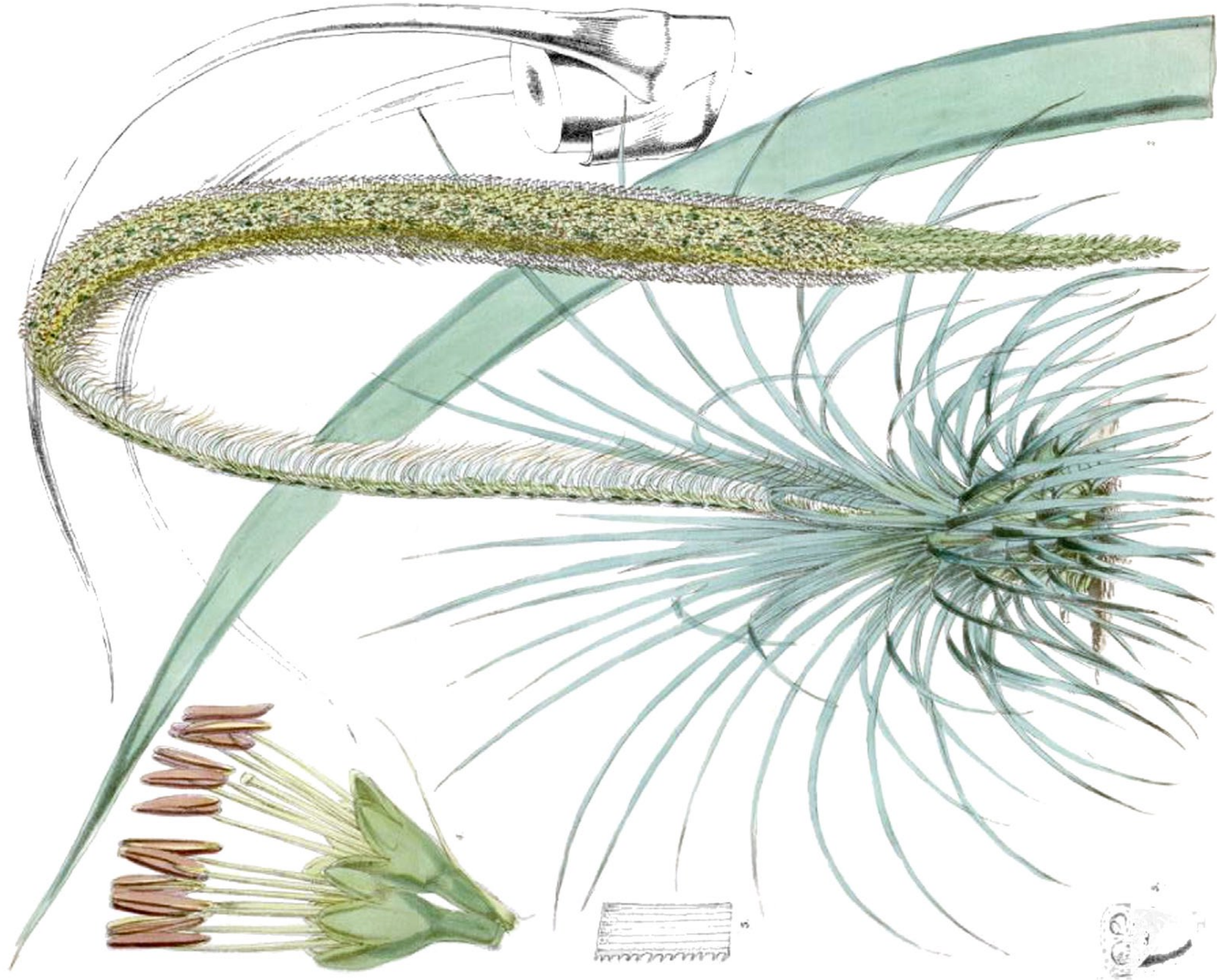
DESCR. *Stem* none, or scarcely rising above the surface of the ground. *Leaves* one and a half to two feet long, obovato-lanceolate, suddenly and sharply acuminate, nearly plane above, more convex beneath, the margin beset with short spines very

AUGUST 1ST, 1856.



variable in shape, straight or falcate, simple or more or less equally bifid or denticulate at the margin; the whole of a pale very glaucous green colour. *Scape* four feet long, entirely clothed with imbricated *bracts*, leaf-like (but smaller than the leaves) at the base, the root of the bracts gradually becoming smaller and more subulate upwards. *Spike* oblong, simple. *Flowers* generally two from the same, or nearly the same, point, and each subtended by one or two subulate *bracts* from a quarter to three-quarters of an inch long. *Perianth* articulated upon an annular disc, two inches long or nearly so, fleshy, green, sometimes tinged with purple, infundibuliform: the tube furrowed: the *limb* of six, moderately spreading, ovate, acute, slightly concave segments. *Stamens* six: *filaments* twice as long as the perianth, erect, subulate, bearing a long, linear, two-celled *anther*, fixed by the centre of the back, purplish-brown, afterwards green. *Ovary* oblong, furrowed, three-celled: *ovules* in two linear rows in each cell. *Style* as long as the stamens, filiform. *Stigma* obscurely three-lobed.

Fig. 1. Young and fully-expanded flower. 2. Section of ovary. 3. Portion of the margin of the leaf:—*magnified*.



Vincent Brooks, Day & Son, Imp.

W. Fitzhugh, del. et. sculp.

TAB. 5716.

AGAVE DASYLIRIOIDES.

Dasyliirion-like Agave.

Nat. Ord. AMARYLLIDÆ.—HEXANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 5333.)

AGAVE *dasyliroides*; acaulis, foliis numerosissimis coriaceis anguste ensiformibus patenti-recurvis longe attenuato-acuminatis marginibus pectinatim serrulatis utrinque convexiusculis pallide glauco-viridibus striolatis, scapo longissimo, parte nudo suberecto bracteis numerosissimis falcato-secundis crinito, parte florifero elongato dependente, spica densissima cylindrica, floribus 2-nis viridibus, perianthio subcampanulato 6-lobo, lobis brevibus obtusis, staminibus strictis perianthio cum ovario æquilongis, antheris brunneis.

AGAVE *dasyliroides*. *Jacobi et Bouché in Hamburg Gartenzeit. v. 21. p. 344, et v. 22. p. 269.*

The noble Agave here figured has been a very conspicuous plant in the conservatory of the Regent's Park Botanic Gardens, where it has flowered three times, on each occasion presenting the same remarkable appearance that our drawing conveys. Mr. Sowerby informs me that it was raised from a packet of seeds sent from Mexico about twenty-five years ago, amongst which seeds were also those of the *Fourcroya longæva*, figured in this Magazine (Tab. 5519). This Agave first flowered in about 1860, and again in 1864, and lastly in January of the present year; on each occasion the old head died away, and a new one formed at its base. For the reduced drawing of the entire plant here given, I am indebted to a lady friend of Mr. Sowerby's. The leaves were three and a half to four feet long, the flower-stem ten feet and a half high, and the crowded sickle-shaped, one-sided bracts on which produced a no less remarkable appearance than the pendulous habit of the floriferous parts. My authority for the specific name of *dasyliroides* is General Jacobi, who says that the same species is cultivated in the Vienna Botanic Garden. Koch, however, considers it the

JULY 1ST, 1868.

same with *A. dealbata*, Lemaire, a plant I have no means of comparing it with.

DESCR. *Stem* in our specimen very short or none. *Leaves* three and a half to four feet long, very numerous, the central erect, the others recurved, narrow ensiform, an inch to an inch and a half broad, rather convex on both surfaces, sharply but minutely pectinately toothed, dull glaucous-green, striated. *Scape* ten and a half feet long, flowering portion sharply recurved, and quite pendulous; lower part most densely clothed with subulate, ensiform, curved, falcate, secund bracts. *Bracts* all similar, and with a similar curvature, the lowest one foot long, the upper gradually smaller. *Inflorescence* a very dense, cylindric, pendulous spike, five feet long, green, dotted with the brown anthers. *Flowering-bracts* subulate, longer than the flowers. *Flowers* sessile, pale green, in pairs, an inch and three-quarters long, exclusive of the stamens; ovary cylindric, rather shorter than the campanulate, six-cleft perianth, whose lobes are short, obtuse, concave, and nerveless. *Filaments* as long as the flowers, stout, strict; *anthers* linear-oblong, bright red-brown.—*J. D. H.*

Fig. 1. Portion of scape and bracts. 2. Upper portion of leaf. 3. Margin of leaf. 4. Flowers. 5. Transverse section of ovary:—*all but 3 and 4 of the natural size.*

AGAVE DENSIFLORA.

Close-flowered Agave.

Nat. Ord. AMARYLLIDÆ.—HEXANDRIA MONOGYNIA.

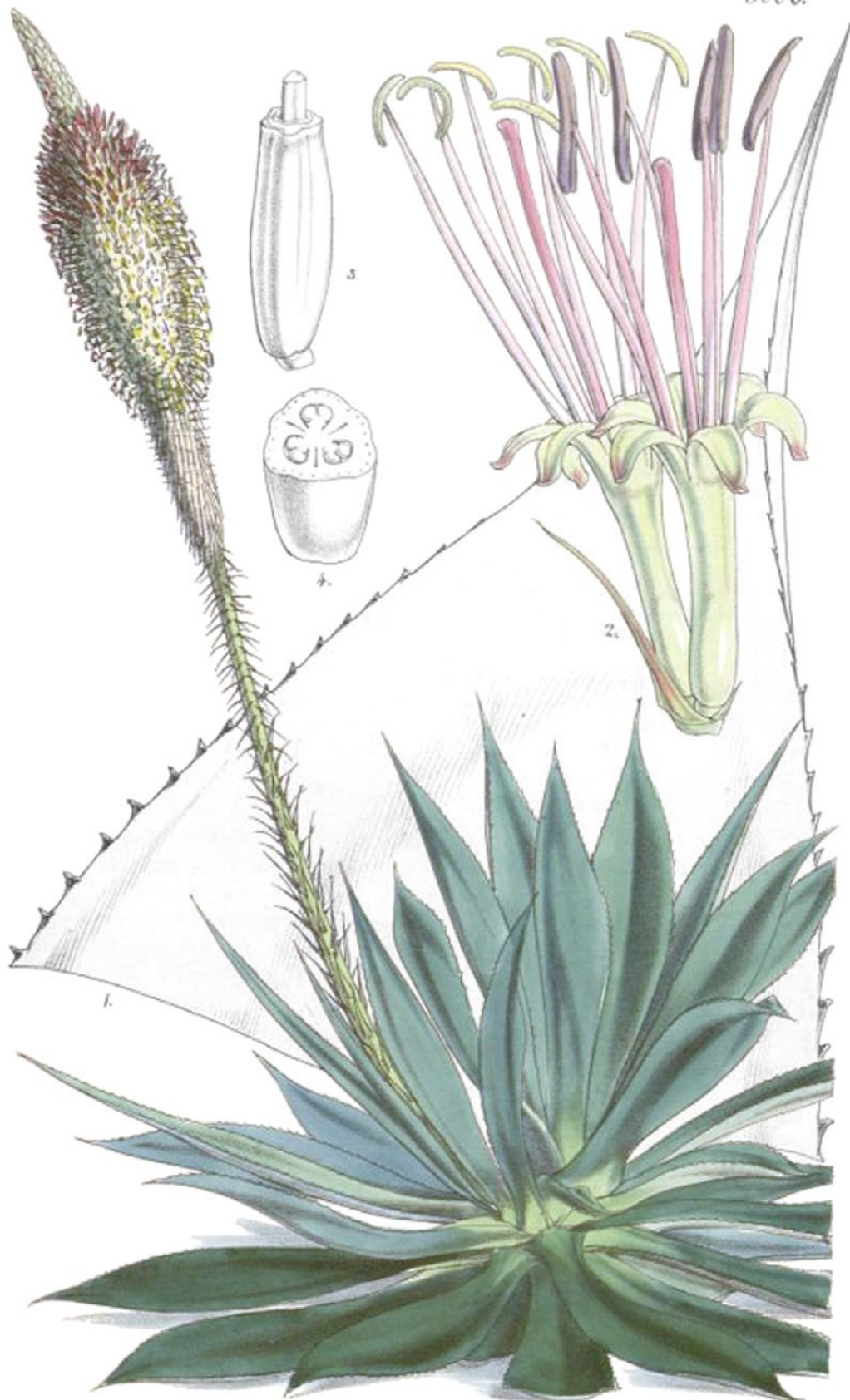
Gen. Char. (Vide supra, sub TAB. 4934.)

AGAVE *densiflora*; acaulis, foliis subtripedalibus obovato-lanceolatis crassis rigidis atro-virentibus inæqualiter breviter spinoso-dentatis apice tenuiter acuminatis spinescentibus dentibus remotiusculis simplicibus supra planis vel apicem versus concavis, dorso convexo, scapo folia longe superantibus 5–6-pedali fere ad basin squamis seu bracteis longis subulatis erectiusculis vel appressis, spica elongata fusiformi, floribus sessilibus numerosissimis ad basin bracteatis, bractea elongato-subulata, perianthio flavo-viridi hypocrateriformi tubo subcylindræo limbi laciniis linearibus reflexis apice sphacelatis, filamentis fusiformibus styloque perianthio plus quam duplo longioribus.

The Succulent-house of the Royal Gardens of Kew contains two fine plants of an unnamed *Agave* which are supposed to have been imported from Mexico, and which, during the present year, have (both) produced their fine flowering scapes. One of these is here figured upon a very reduced scale; but I regret to say that, with all the advantages of flower and fruit before me, I am unable to refer it to any described species. Kunth, the most recent author on the genus, describes thirty-eight species, included under three primary groups; 1. *Scape paniculato-ramose*; 2. *Scape simple, flowers spiked and sessile* (to which our plant belongs); 3. *Species mihi haud classificande*. With none of the species there described will our plant accord. I have no alternative then, but, as with the allied *Agave* (that is, belonging to the same section) figured at our Tab. 4934, to describe it as new.

DESCR. *Stem* none. *Leaves*, external ones horizontally spreading, the rest gradually more erect, and the central ones quite so, lanceolate, dilated at the base, finely pungently and spinulose acuminate at the apex, four to five inches broad, convex on the under side, nearly plain or canaliculate above, or concave below

SEPTEMBER 1ST, 1857.



the extremity, the *substance* thick, firm, coriaceous, of a full dark green colour (not at all glaucescent), the margin spinosodentate, *spines* erecto-patent, short, with a broad base, suddenly acuminate, scarcely a line long, hard, horny, almost black. *Scape*, including the spike, nearly six feet long, more than an inch thick, arising from among the inferior leaves, or terminal, bearing two or three small narrow leaves at the base; these leaves suddenly pass into long (three to four inches), subulate, membranaceous *bracts*, at first green, then pale brown, numerous, more or less erect, or spreading, or even deflexed. *Spike* gradually elongating as the flowers advance, at length a foot and more long in the state of the densely compacted innumerable *flower-buds*, cylindrical, acuminate, pale green. The *flowers* expand from below upwards, and soon the spike takes a broad fusiform shape, below narrow, and brownish with the withered reflected flowers, then a broad band of yellowish flowers past perfection, but not withered: these are succeeded by the rich purple of the stamens and pistils of the recently opened blossoms, and the apex is formed by the unexpanded buds. *Flowers* often only staminiferous, all densely crowded, sessile, each pair subtended by a subulate *bractea*. *Perianth* yellow-green, hypocrateriform; segments of the limb patenti-reflexed, sphacellate at the point. *Filaments* more than twice as long as the perianth, tapering at each end, hence fusiform, purple. *Anthers* long-linear, versatile, dark purple, yellow when burst, from the copious pollen. *Ovary* elliptical, somewhat angled, three-celled; seeds many, in two rows in each cell. *Style* shorter than the stamen, stout filiform. *Stigma* obtuse, a little dilated.

Flowering plant, *greatly reduced*. Fig. 1. Apex of a leaf, *nat. size*. 2. Pair of flowers and bract. 3. Ovary. 4. Transverse section of ditto:—*magnified*.

TAB. 8451.

AGAVE DISCEPTATA.

Central America ?

AMARYLLIDACEAE. Tribe AGAVEAE.

AGAVE, *Linn.*; *Benth. et Hook. f. Gen. Plant.* vol. iii. p. 738.

Agave (Littaea) **disceptata**, *J. R. Drumm.*; species e grege *A. gemniflorae*, Scannag., et *A. angustissimae*, Engelm., maxime affinis, ab eis autem ob perigonii tubum conspicue breviorum et ob ovarium haud angustatum facile distinguenda.

Sffrutex, trunco perbrevis foliis sat congestis rosulatis dispositis celato. *Folia* fibroso-coriacea, exteriora patentia nec recurva, intermedia recta ascendunt, interiora plus minusve incurva, pedetentim in bracteas abeuntia, lineari-loriformia, parte superiore leniter angustata, basi primum tenui, tunc in pulvinum modicum exescente, infra quadraeformi, supra ovato-lanceolata, ad 4–5 cm. ultra basin in collum sensim contracta, versus apicem sat obtusum gradatim attenuata ibique spina vix 5 mm. longa armata, pulvino incluso circiter 17 cm. longa, ima basi vix 2.5 cm. lata, apud collum fere 7 mm., ultra collum circiter 10 mm. lata, pulvini medio fere 12 mm. crassa, utraque facie parum convexa, laevigata, laete viridia, in parte superiore praesertim subtus lineis lacteis irregulariter notata, margine subpapyracea, tandem filamentoso-dilacerata. *Scapus* 1.65 m. altus, pedunculo circiter 8 dm. longo bracteis subscariosis elongatis instructo; bracteae basi deltoideae, superne aciculares, subadpressae, ad medium scapum circiter 2.5 cm. longae. *Flores* geminati, in spicam laxiusculam digesti; pedicelli doliiformes brevissimi; bracteolae submembranaceae, obscurae. *Perigonii* lobi margine purpureo-rosei, ceterum viridescens, ultra 12 mm. longi, fere 5 mm. lati; tubus circiter 12 mm. longus, inferne constrictus ibique circiter 2.5 mm. latus. *Stamina* parum arcuata, circiter 5 cm. longa, filamentis rubescentibus, antheris luteis basi retusis. *Ovarium* circiter 1–2 cm. longum, 5 mm. latum, obscure rubro-notatum; stylus vix 3 cm. longus. *Capsula*, vix matura, 6-loba lobis alternis majusculis minimisque, circiter 1.5 cm. longis, 8 mm. lata. *Semina* circiter 4 mm. longa, atra, polita vix tamen nitentia.—*A. Leopoldi*, Hort. ex Kew Hand-list Tend. Monocut. p. 115.—J. R. DRUMMOND.

The *Agave* which forms the subject of our plate is one which was presented to Kew in 1893 by the late Mr. W. B. Kellock from the valuable collection of succulent plants formed by him in his garden at Stamford Hill. Its history beyond this point is unfortunately obscure in the extreme. It was received at Kew as *A. Leopoldi*, Hort., and at the time of its presentation Mr. Kellock believed it to have originated as the result of crossing *A. filifera*, Salmdyck, with *A. princeps*, Hort.; it has found a place in the Kew Hand-list of Tender Monocots under the name attributed

AUGUST, 1912.

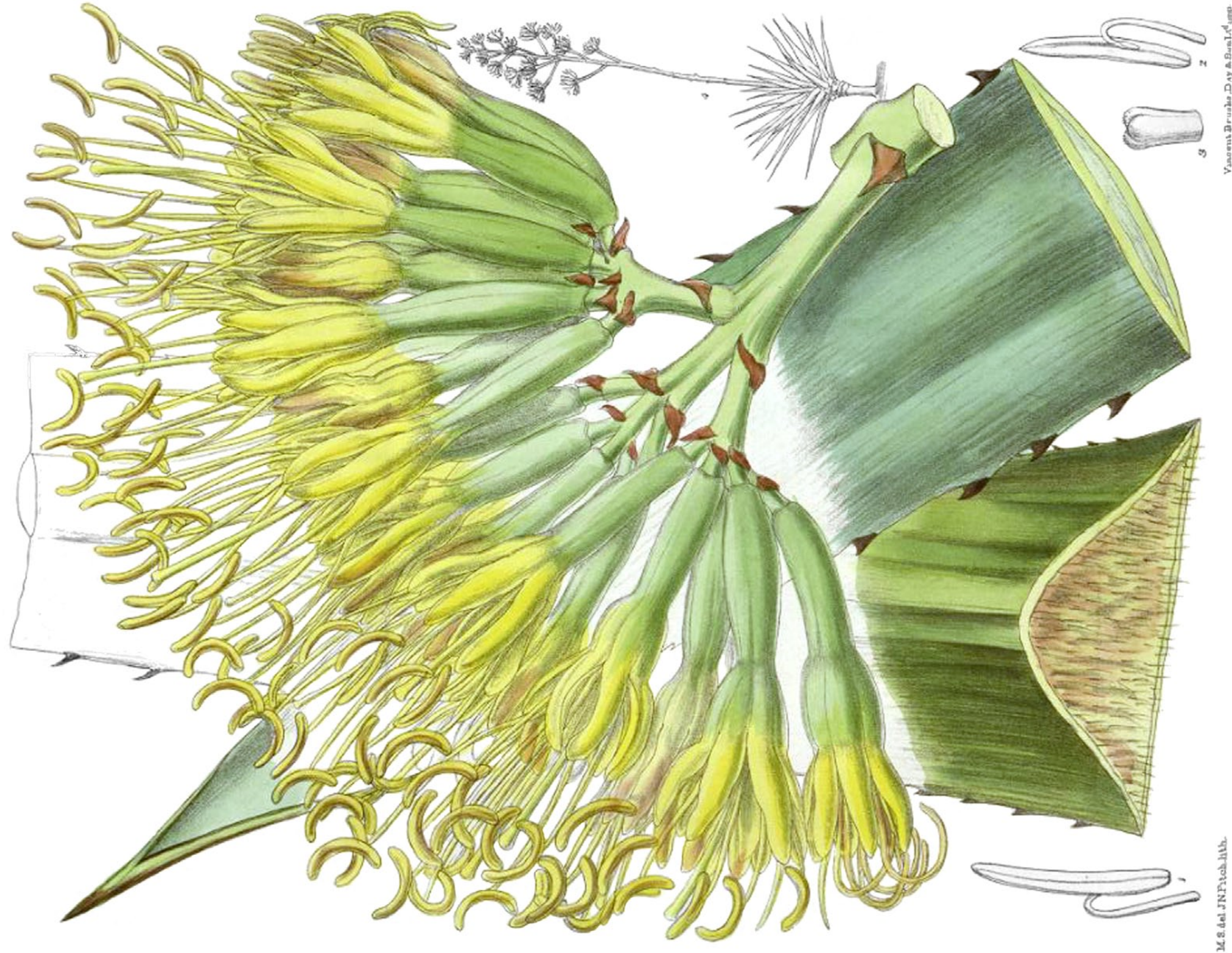


to it by Mr. Kellock. It may, however, be pointed out here that this is not the only *Littaea* presented to Kew under the name *A. Leopoldi*; as a matter of fact this plant, the *A. Leopoldi* of the 'Hand-list,' was known in Mr. Kellock's collection as *A. Leopoldi* No. II., and the name has been provisionally restricted to the *Littaea* now figured because *A. Leopoldi* No. I. was found to agree with a plant already under cultivation under an older name. What the identity of '*A. princeps*,' suggested as one of the parents of our plant, may be it has been impossible to ascertain, but the matter is not now of material consequence, since it is found, now that the plant has flowered, that its characters negative the suggestion that it is a hybrid between any two of the *Littaeas* known to have been in cultivation in any part of Europe. On the contrary these characters clearly point to its being a perfectly valid species and, although as to this there is not the same certainty, its characters suggest that it is probably a native of Central America. Like *A. filifera*, *A. disceptata* produces suckers from the base of the stem, and like *A. filifera* has thriven well in the Succulent House at Kew under the conditions suitable for Agaves generally. Here it flowered, eighteen years after its presentation, in October 1911, and provided the material from which our figure has been drawn, and on which it has at last been possible to base a definite description.

DESCRIPTION.—*Succulent undershrub*, stem very short, clothed with a dense rosette of leaves. *Leaves* fibrous-coriaceous, the outermost spreading but not recurved, the central straight ascending, the innermost somewhat incurved, passing gradually into the bracts, linear-loriform, the upper portion very gradually narrowed, the base thin, then suddenly swollen into a pulvinus, which is square below, ovate-lanceolate above, contracted into a neck about 2 in. above the base, at the apex, which is rather blunt, armed with a spine which is under $\frac{1}{4}$ in. long, nearly 1 in. across at the base, about $\frac{1}{3}$ in. wide at the neck and $\frac{2}{3}$ in. wide higher up, the pulvinus about $\frac{1}{2}$ in. thick in the middle, slightly convex, smooth and bright green on both surfaces, but in the upper portion and especially beneath irregularly marked with whitish streaks, the margin almost papery ultimately shredding into thin curled threads. *Scape* about

$5\frac{1}{2}$ ft. high, its peduncle about $2\frac{1}{2}$ ft. long, clothed with long subscarios bracts; bracts deltoid at the base, acicular above, somewhat adpressed to the scape, those in the middle about 1 in. long. *Flowers* scattered in a rather loose spike, geminate; pedicels rather thicker in the middle than at either extremity, very short; bracteoles almost membranous, obscure. *Perianth-lobes* greenish with rosy-purple edges, over $\frac{1}{2}$ in. long, about $\frac{1}{5}$ in. wide; tube about 4 in. long, narrowed below and there $\frac{1}{10}$ in. wide. *Stamens* slightly curved, about 2 in. long; filaments reddish; anthers yellow, retuse at the base. *Ovary* about $\frac{1}{2}$ in. long, $\frac{1}{5}$ in. wide, obscurely streaked with red; style about $1\frac{1}{4}$ in. long. *Capsule*, barely ripe, 6-lobed, the lobes alternately large and quite small, about $\frac{2}{3}$ in. long, $\frac{1}{3}$ in. wide. *Seeds* about $\frac{1}{6}$ in. long, black and polished but hardly shining.

Fig. 1, section of a leaf; 2 and 3, anthers; 4, stigma; 5, sketch of an entire plant:—all enlarged except 5, which is much reduced.



M. G. del J. N. Fitch. hkb.

L. V. 1888 & C. L. 1888

Vincent Brubaker Day & Bush, 1888

TAB. 8746.

AGAVE FOURCROYDES.

Yucatan.

AMARYLLIDACEAE. Tribe AGAVEAE.

AGAVE, *Linn.*; *Benth*, et *Hook. f.* *Gen. Plant.* vol. iii. p. 733.

Agave (§ Euagave) **fourcroydes**, *Lem. in Ill. Hort.* vol. xi. Miscell. p. 65; *Trelease in Rep. Miss. Bot. Gard.* vol. xix. pp. 277–279, et in *Mem. Nat. Acad. Sci. Washington*, vol. xi. p. 48, t. 110–112; *Berger, Agaven*, p. 288, fig. 69, species e grege *Rigidarum-Sisalanarum*, ab omnibus affibus differt praesertim rosula caulescente foliorumque spina terminali robusta.

Frutex caulescens, caule robusto erecto 0·75–1·2 m. et ultra alto, 25 cm. diametro, rosula elongata plurifolia coronato basi stolonifero. *Folia* rigidissime erecto-patentia, coriaceo-carnosa, glauca, oblanceolato-ensiformia, circiter 1·4 m. et ultra longa, basin versus attenuata, supra medium 10–12 cm. lata, sensim acuminata, basi supra convexa, hinc planiuscula, superne canaliculata et marginibus erecta, subtus carinato-convexa; ad margines e basi usque 5–7 cm. infra spinam terminalem aculeata, spinae basales parvae saepe confluentes, reliquae majores 2·2–2·5 cm. inter se distantes e basi dilatata 5–6 mm. longa acumine anguste deltoideo re-vel incurvato 2–4 mm. longo atrobrunneae, margine inter spinas recto vel paullum sinuato; spina terminalis robusta, 3 cm. longa, conica, recurvula, basi supra paullum excavata, haud vel vix decurrente, atrobrunnea. *Inflorescentia* 6–7 m. alta; pedunculus erectus, robustus, bracteis vacuis numerosis triangularibus acutis adpressis mox exsiccantibus vestitus; panícula ampla, pedunculum fere aequans vel eo brevior, oblongo-pyramidalis, recta vel subcurvata, ramis circiter 15–20 patentibus apice repetite trichotome divisus et flores numerosos luteo-virides dense aggregatos ferentibus, post anthesin capsuligeris et abundanter bulbiferis. *Pedicelli* circiter 5 mm. longi, bracteis minutis late deltoideis acutis. *Perianthii* tubus obconio-campanulatus, 6-sulcatus, 15–17 mm. longus; segmenta sublinearia, obtusa, tubi longitudine vel paullum longius, luteo-viridia mox exsiccantia. *Filamenta* medio tubi affixa, luteo-viridia, 6·5 cm. longa; antherae luteae. *Ovarium* subtrigono-cylindraceum, utrinque angustatum, superne sub tubo constrictum, 3·5 cm. longum, 6-sulcatum, viride, pruinatum; stylus demum fere 8 cm. longus, stigmate capitato. *Capsula* oblongo-clavata, subtrigona et 3-sulcata, circiter 5·5 cm. longa, basi stipitata, apice rostrata; semina atra, fere semi-orbicularia, 9–10 mm. longa.—*Agave ixtlioides*, *Lem. ex Jacobi in Hamb. Gartenzeit.* (1866), p. 214, Versuch. p. 287; non *Hook. A. rigida*, var. *longifolia*, *Engelm. in Trans. Acad. Sci. St. Louis*, vol. iii. p. 861; *Collected Works*, p. 312. *A. ixtli*, var. *elongata*, *Baker in Gard. Chron.* 1877, vol. viii. p. 397; *Ricasoli, Monogr. Agav.* p. 21; *Terrace. Primo Contributo*, p. 44. *A. rigida*, var. *elongata*, *Baker, Handb. Amaryll.* p. 181; *Kew Bulletin*, 1892, p. 33; *Braun in Pflanze*, vol. iv. p. 70. *A. elongata*, *Berger, Hort. JAN.—MARCH*, 1918.

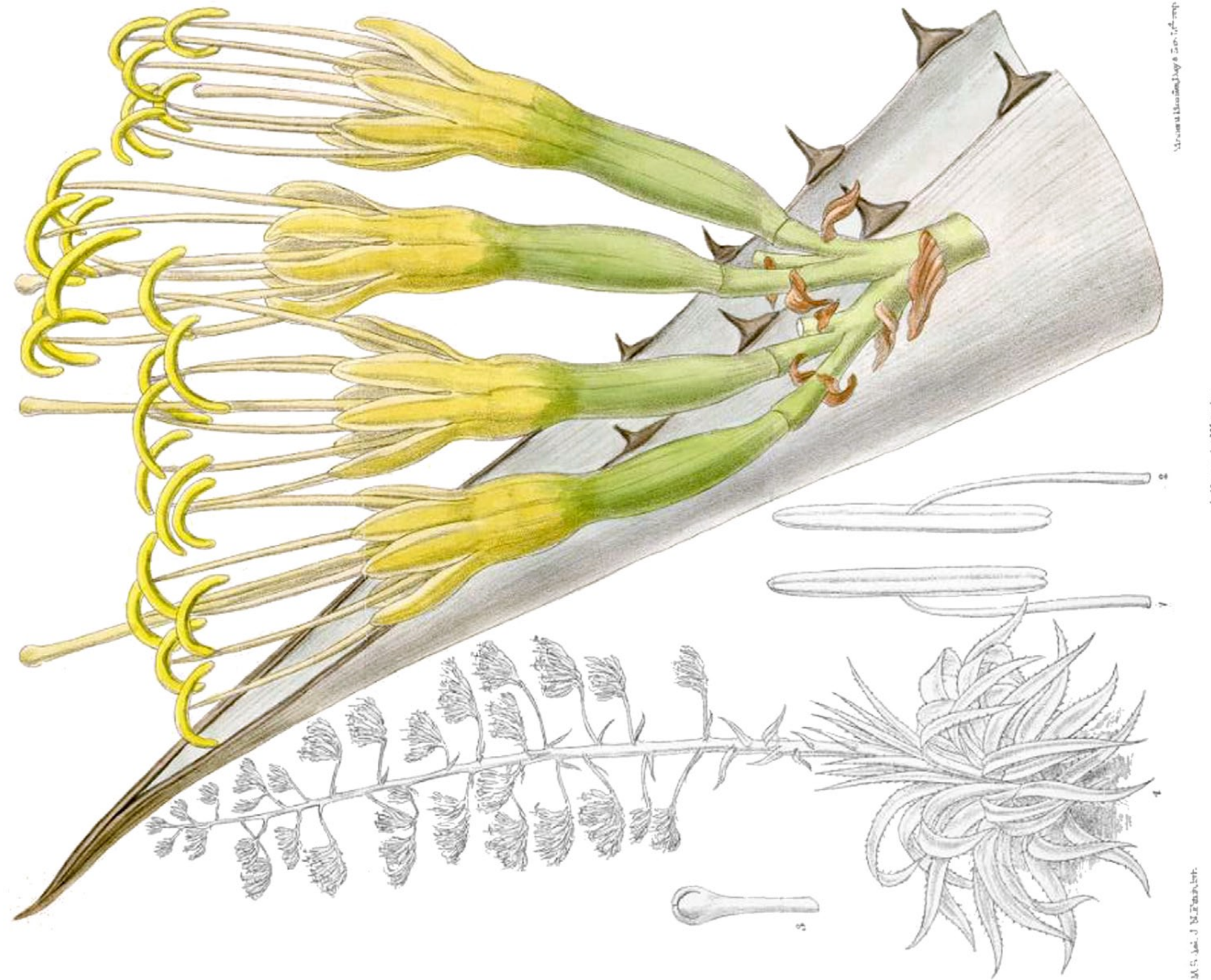
Mortol. 11, p. 859; non Jacobi. *A. rigida*, Hort. ex Berger in Gartenwelt, vol. ii. p. 604 cum figura, ex parte. *A. Ixtli*, Hort. *A. longifolia*, Hort. —A. BERGER.

The *Agave* here figured from material supplied from a plant that poled in 1914 in the garden of Lady Hanbury at La Mortola, Ventimiglia, Italy, though a species that is neither new nor rare, fully deserves a place in this work on account of its great economic interest. It is the species which supplies from its leaves the fibre known as Henequen, a material which rivals in its qualities and value, and is perhaps at times confused with the now more familiar fibre known as Sisal. The Henequen plant is a native of Yucatan in which province of Mexico it is also largely cultivated. From thence it has now spread to most countries with a tropical or semitropical climate, and where it is not grown for the sake of its fibre it is used as an effective hedge-plant, or as a decorative subject in gardens. It is singular that nothing should be known with certainty as to when or by whom this species was first introduced to cultivation in Europe, and even its introduction as an economic species is obscure. It is difficult to believe that this species and its rival *A. sisalana* were unknown to Jacobi, yet there is no description by that author which agrees entirely with either plant. As regards *A. sisalana* the same is true of Lemaire, and it is only because Professor Trelease has been able to associate Lemaire's name *A. fourcroydes* with the species now figured that we believe Lemaire to have known the Henequen, for the original description of the plant leaves this doubtful. Until Trelease thus vindicated the name Lemaire had proposed, the nomenclature of the Henequen was somewhat confused; other authors, unwilling to establish a new species, have endeavoured to associate the Henequen with *A. rigida*, Mill., *A. elongata*, Jacobi, *A. candelabrum*, Todaro, and yet other species from which it differs very markedly. *A. fourcroydes* belongs to the subgenus *Euagave*, and within this its affinities are with the *Sisalanae*. group of the *Rigidae*, among which it is characterised by its narrow leaves and non-decurrent end-spine. Reproduction is singularly well provided for in this species. The

rosette throws out suckers; the panicle gives rise to great numbers of viviparous bulbils, and at the same time ripens capsules which contain an abundance of seeds.

DESCRIPTION.—*Shrub*, developing a stem 3–4 ft. high and 10 in. thick, emitting suckers at the base. *Leaves* numerous in a terminal rosette, rigidly erecto-patent, $4\frac{1}{2}$ ft. long, oblanceolate-ensiform, 4 in. or more wide above the middle, gradually narrowed towards the base, apex rather shortly acuminate, not very fleshy, glaucous and somewhat pruinose, smooth, convex on the upper surface near the base, then flat and channelled with upcurved margins, underneath convex and almost keeled; margins armed from the base to about 2–3 in. below the end-spine, basal prickles very small, often confluent, the others about $1\text{--}1\frac{1}{2}$ in. apart, blackish, with a broad horny base and a fine short point, 1–2 lin. long, the lower recurved, the others upcurved (sometimes the point twice bent), the margin between almost straight; end-spine stout, conic, $1\frac{1}{4}$ in. long, a little recurved, not decurrent, round, grooved below the middle, blackish-brown. *Inflorescence* about 18–21 ft. high, straight or slightly curved at the top; scape stout, green, with numerous adpressed triangular acute empty bracts; panicle oblong-pyramidal, rather loose, with about 15–20 branches, which are patent, tripartite at the top, with numerous flowers in dense clusters; pedicels very short; bracts minute, deltoid, soon withering. *Flowers* $2\frac{1}{2}$ –3 in. long. *Perianth* tube about $\frac{5}{8}$ in. long, 6-furrowed, broadly obconic-campanulate; segments about as long as or a little longer than the tube, linear, obtuse, yellowish-green, soon withering. *Filaments* inserted in the middle of the tube, $2\text{--}2\frac{1}{3}$ in. long; anthers 1 in. long, yellow. *Ovary* cylindric-clavate, somewhat triangular, green, pruinose, constricted at the top, $1\frac{3}{4}$ in. long; style 3 in. long; stigma clavate. *Capsule* oblong-clavate, obtusely triangular, 3-furrowed, with stipitate base and beaked apex, over 2 in. long. *Seeds* almost semiorbicular, $4\frac{1}{2}$ –5 lin. long, black. *Bulbils* very numerous.

TAB. 8746.—Figs. 1 and 2, anthers; 8, stigma; 4, sketch of an entire plant:—*all enlarged except 4, which is much reduced.*



TAB. 8317.

AGAVE FRANZOSINI.

Mexico or Central America.

AMARYLLIDACEAE. Tribe AGAVEAE.

AGAVE, *Linn.*; *Benth. et Hook .f. Gen. Plant.* vol. iii. p. 733.

Agave (Euagave) *Franzosini*, *Nissen in Hort. ex Ricasoli, Della Utilita dei Giardini d'Acclimazione* (1888), p. 7 (nomen); *Sewell in Gard. Chron.* 1889, vol. vi. p. 69; *W. Wats. in Kew Bull.* 1889, p. 301; *Bak. in Kew Bull.* 1892, p. 3, et in *Gard. Chron.* 1892, vol. xii. p. 179, fig. 31; *Berger in Gartenwelt*, 1898, vol. ii. p. 603, c. icon.; species ex affinitate *A. Verve Crucis*, *Mill.*, sed differt foliia numerosioribus majoribus glaucissimis asperimis, paniculaque magis elongata.

Acaulis, rosula maxima, stolonifera. *Folia* circiter 40, magna, erecta eleganter recurvata, 2·25 m. longa, oblanceolata, superne canaliculata, rigida sed parum carnosa, saepe ad margines undulata vel varie flexa, basin versus sensim attenuata et carnosiora, subtus valde convexa, supra medium 35–41 cm. lata, sensim acuminata et in spinam validam conicam 6–7 cm. longam atro-brunneam breviter decurrentem abeuntia, glaucissima, sub sole aestivo albida vel caesia, utrinque asperima et basin versus zonis vel arcis viridibus laevibus irregulariter maculata, ad margines parum sinuatos aculeis magnis atro-brunneis remotiusculis deltoideo-uncinatis vel patulis 1–2 cm. longis armata. *Inflorescentia* maxima, 11·5 m. alta; scapus validus basi 27 cm. diametro, 2·75 m. longus, glaucus, bracteis vacuis inferioribus foliaceis superioribus deltoideis subulato-acuminatis munitus; panicula 8·75 m. longa, 2·9 m. lata, oblonga, ramis numerosis patentibus viridibus superne repetite trichotome divisus flores numerosos gerentibus; bractee parvae, deltoideae, reflexae; pedicelli 1–2 cm. longi. *Perianthii* segmenta basi in tubum ventricosum-infunduliformem 22 mm. longum extra flavescentem continuata, superne libera, aurea, mox siccantia, 32 mm. longa; exteriora superne linearia, obtusa, planiuscula, interiora dorso carinata intus canaliculata. *Stamina* ad medium tubi affixa; filamenta flavescentia, robusta, 8 cm. longa; antherae sulfureae, 4 cm. longae. *Ovarium* 5 cm. longum, 3(–6)-gonum, laete et nitide viride, basin versus attenuatum, superne 13 mm. latum; stylus robustus trigonus, demum 12 cm. longus; stigma capitatum, obscure trilobum.—A. BERGER.

The *Agave* which forms the subject of our illustration, which Mr. J. G. Baker terms “the prince of the Agaves,” is certainly one of the noblest members of the genus. very distinctive whitish or bluish colour which shows to much advantage in strong sunlight, the vigour of its growth and the grace of its habit combine to render it a striking and delightful object. It is not certainly known whether its original home be Central America or Mexico, but it almost certainly came from one or other of these

JUNE, 1910.

areas, and Mr. Vincenzo Ricasoli, in the place quoted above, gives Mexico as its home. It appears to have been introduced to Italy in the first instance by Mr. Francesco Franzosini, in whose fine garden at Intra on Lago Maggiore there were plants prior to 1878, the year in which it was added by the late Sir T. Hanbury to his collection at La Mortola, where it flowered for the first time in 1889. Since then it has flowered repeatedly there, has always produced abundant seed, and has been widely distributed. It was first added to the collection of Agaves at Kew in 1890, when Sir T. Hanbury sent seeds to this establishment, which in 1892 was further indebted to the same generous correspondent for a living plant.

The plant from which the material employed in preparing our plate was obtained was a magnificent specimen in the garden at La Mortola, whose age was not much over 15 years. At the end of April it showed no sign of flowering, but in the middle of May the enormous peduncle began to appear, and, growing with great rapidity, reached its full size in about six weeks; the first flowers began to open on the lowest branches on July 21st, and a fortnight later the material for our plate was available.

A. Franzosini is easily propagated by suckers which soon grow into sturdy plants under the treatment suitable for *A. Vera Cruz*, and appears to be as hardy as that species. At La Mortola it seems to prefer the hottest situations; it requires as much light as possible, and should not be kept at all damp, otherwise it is apt to become less glaucous and to lose much of its distinctive beauty. At Kew *A. Franzosini* thrives well under the treatment suitable to its nearest allies.

DESCRIPTION.—*Stem* 0; rosette very large, in full-grown examples 15 ft. wide and 10–11 ft. high, with about 40 somewhat recurved and gracefully bent, whitish or bluish-white leaves and many suckers. Leaves about 7½ ft. long, 5–6 in. thick at the base, convex on both sides, but especially beneath, and there narrowed, 6½ in. wide, thence gradually becoming wider and thinner upwards, oblanceolate and 14–16 in. across when flattened out, but generally broadly and deeply channelled while still young and erect, the margins at times wavy, the apex ending in a strong conical

subulate blackish-brown end-spine 2¼–3 in. long, decurrent on the margins for 4–8 in.; the margins lower down bordered with spines and slightly or hardly repand between the spines; those lowest down rather small and close set, 3 lin. long and 8 lin. apart, deltoid uncinat, the next above larger, and ¾–1 in. apart; the upper spines about the middle of the leaf 2 in. apart, and sometimes with one or two smaller ones between them, deltoid-uncinate, recurved or spreading from a wide fleshy base, above the middle still larger, about ¾ in. long, and from a more repand margin; those near the tip standing as far apart, but again smaller; all blackish brown; upper leaves in a flowering rosette shorter and narrower, the highest linear-lanceolate with a straight margin and sometimes with a continuous horny border; both surfaces rough and whitish, but irregularly marked with small green patches or stripes, especially underneath. *Inflorescence* almost 40 ft. high; scape stout, about 9 ft. long and 11 in. thick, with several empty bracts, the lowest leafy, the upper scaly, triangular with a subulate tip; panicle oblong or cylindric-ovate, about 10 ft. across; branches spreading, the lowest shortest, with small deltoid basal bracts, 2–3 times 3-furcate upwards, many-flowered; pedicels 5–10 lin. long; bracts very small, deltoid; flowers over 4 in. (including the style over 7 in.) long. *Perianth-segments* united below in a globose or wide funnel-shaped tube; above free, linear, obtuse, soon withering, brightish yellow; the outer flat, 1¼ in. long, the inner narrower, keeled without and channelled within. *Stamens* attached near the middle of the tube; filaments stout, yellowish, 3 in. long; anthers sulphur yellow, 1½ in. long. *Ovary* somewhat clavate, 3(–6)-angled, smooth, bright green, 2 in. long, narrowed at the apex; style very stout, 4½ in. long; stigma thickened, obscurely 3-lobed.

Figs. 1 and 2, anthers; 3, stigma; 4, whole plant, showing habit:—1–3 enlarged, 4 much reduced.

AGAVE GLAUDESCENS.

Glaucous Agave.

Nat. Ord. AMARYLLIDÆ.—HEXANDRIA MONOGYNIA.

Gen. Char. *Perigonium* corollinum, superum, infundibuliforme, persistens, limbi sexpartiti laciniis submæqualibus. *Stamina* 6, tubo perigonii inserta; *filamenta* filiformia, æstivatione inflexa, sub anthesi exserta; antheræ lineares, versatiles. *Ovarium* inferum, triloculare. *Ovala* plurima, in loculorum angulo centrali biseriata, horizontalia, anatropa. *Stylus* filiformis, exsertus, cavus, apice pervius; *stigma* capitato-trigonum. *Capsula* coriacea, trigono-triquetra, trilocularis, loculicide trivalvis. *Semina* plurima, plano-compressa; *testa* chartacea, marginata; *raphe* laterali, umbilicum prope basin lateralem chalazæ sub-apicali jungente. *Embryo* cylindricus, axilis, albuminis carnosus longitudine, extremitate radiculari umbilicum spectante.—*Herbæ acaules v. caulescentes, interdum gigantes, longævæ, vel semel florentis, in America tropica et subtropica cis æquatorem indigenæ, quædam nunc a mortalibus late diffusæ; foliis radicalibus carnosis, interdum maximis, marginibus spinosis; floribus in scapo radicali bracteato paniculatis numerosissimis. Endl.*

AGAVE *glaucens*; caule elongato crasso, foliis crassissimis 2–3-pedalibus glaucis spatulato-lanceolatis marginatis integerrimis apice longe spinescentibus supra concaviusculis subtus valde convexis, scapo bipedali copiose subulato-bracteato, spica caudiformi crasso densiflora cernuo scapo quadruplo longiore demum copiose viviparo, floribus in bracteis subulatis aggregatis pedicellatis, pedicellis brevibus basi bracteolatis, ovario cylindræo, tubo brevi contracto, limbi laciniis linearibus, staminum filamentis longitudine perianthii, stylo longiore.

AGAVE *glaucens*. *Hort. Kew.*

Of the fine and in many species stately genus *Agave*, no less than sixty-four species are enumerated and attempted to be characterized in Professor Koch's 'Wochenschrift des Vereines zur Beforderung des Gartenbaues in den kiniglich Preussischen Staaten,' etc., for 1860, chiefly from garden plants, and too often plants whose flowers are unknown. We do not find among them one which accords with our present individual, which has been cultivated in the Succulent House at Kew, where it was

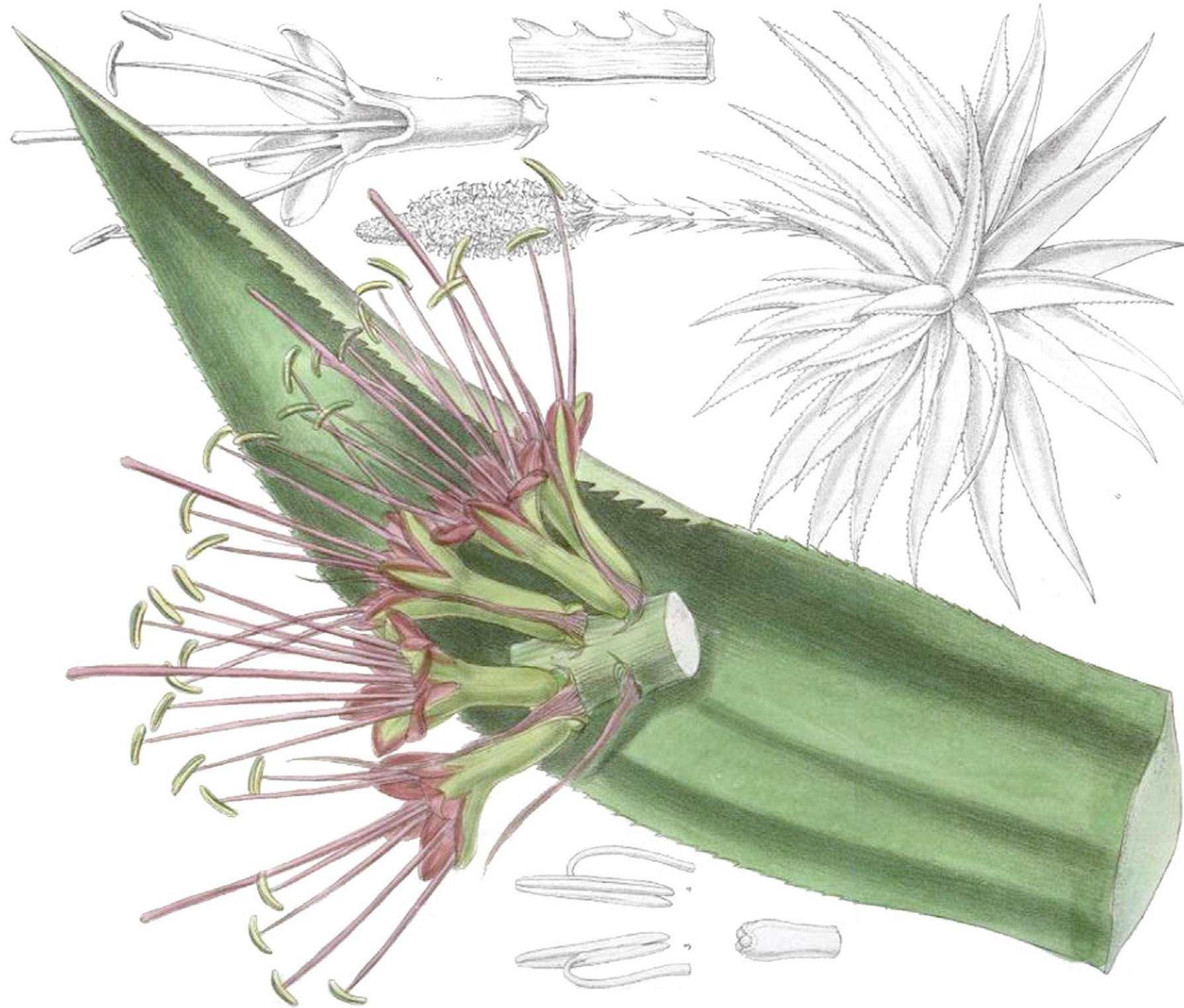
SEPTEMBER 1ST, 1862.



received from Galeotti many years ago as a native of Mexico, under the name we have here adopted. It flowered in the autumn of 1861 for the first time, and was a very attractive object during the whole winter, for the expansion of the innumerable flowers on the long and singularly decurved spike was very gradual, and now that we are describing it (August, 1862) the spike still remains with a few imperfect capsules, and an immense quantity of young plants germinating on the rachis. The leaves are withering, and the foliage and most of the stem will probably die; but suckers are produced from the base of the stem, and there is altogether a most abundant crop of young plants.

DESCR. *Stem* three to four feet high, and twelve inches in circumference, cicatrized with the transverse scars arising from the fallen leaves. *Leaves* two to three feet long, forming a noble crown to the stem, very thick and fleshy, and singularly glaucous, spathulato-lanceolate, quite entire, and with a narrow cartilaginous margin, terminated by a long and very pungent and subulate *spine*. *Scape* eight feet long, cylindrical, erect or nearly so, beset with large subulate *bracts*, and terminating in a dense; caudate, remarkably deflexed *spike*, nearly as thick as one's arm, of really innumerable, most firmly compacted, and imbricated flower-buds. The lowest buds are the first to diverge from the rachis, and to expand; and then the spike becomes *hérissé* with the multitude of stamens and styles, and eventually with a large crop of young plants, for it is abundantly proliferous, especially towards the apex. *Bracteoles* about three inches long, subulate, including two to four shortly pedicelled, green flowers, each about an inch and a half long. *Ovary* inferior, oblong, broader than the short free portion of the cylindrical *tube*; *limb* of six rather long, linear, obtuse, channelled, spreading *segments*. *Stamens* as long as the flowers, or even longer. *Anthers* long, linear. *Style* often as long as the filaments of the stamens.

Fig. 1. Very reduced flowering plant. 2. Portion of the rachis of the spike, with flowers:—*natural size*. 3. Bract, bracteoles, and flowers:—*slightly magnified*. 4. Apex of a leaf:—*natural size*.



TAB. 7527.
AGAVE HASELOFFII.
Native of Mexiro,

Nat. Ord. AMARYLLIDÆ.—Tribe AGAVEÆ.
 Genus AGAVE, Linn.; (*Benth. et Hook. f. Gen. Plant.* vol. iii. p. 738.)

AGAVE (Littæa) *Haseloffii*; acaulis, foliis 30–40 dense rosulatis lanceolatis viridibus subcarnosis ad basin vix angustatis spinâ terminali haud pungente aculeis marginalibus parvis crebris deltoideis apice corneis nigris, pedunculo valido arcuato bracteis multis adpressis prædito, floribus geminis sessilibus, in spicam densam dispositis, bracteis propriis magnis scariosis linearibus basi deltoideis, ovario oblongo, perianthii tubo brevi campanulato, lobis oblongis brunneo-viridibus, staminibus lobis 4–5-plo. longioribus, antheris linearibus parvis, stylo demum antheras superante.
A. Haseloffii, *Jacobi Monogr. Agav.* (1864) p. 244; in *Hamb. Gartenzeit.* vol. xxii. (1866) p. 220. *Baker in Gard. Chron.* 1877, p. 683; *Handb. Amaryllid.* p. 189.

This Agave belongs to the section *Aloideæ*, in which the leaves are more fleshy, and not rigid in texture as in the better known *Americanae* and *Rigidae* and the marginal prickles always numerous and minute. The species of this group are comparatively rare in cultivation. The present plant has been grown at Kew for many years, but flowered for the first time in the summer of 1895. The species was originally described by Jacobi in 1864, and was named by him after the gentleman in whose garden he saw it.

Descr.—*Leaves* thirty to forty, in a dense sessile rosette, lanceolate, rather soft, and not very thick in texture, a foot and a half or two feet long, three inches broad at the middle, very little narrowed towards the base, pale bright green, the end spine not horny nor pungent, the marginal prickles very close and small, tipped with black. *Peduncle* arising from the base of the rosette of the leaves, stout, arcuate, three feet long, with numerous ascending bract leaves, the upper scarioses and long-pointed. *Flowers* in sessile pairs, forming a dense spike, which is five or six inches in diameter when they are fully expanded; bracts

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large, scariose, linear from a dilated base. *Ovary* green, oblong, an inch long. *Perianth-tube* very short, campanulate; lobes of the limb oblong, greenish-brown, half an inch long. *Stamens* above two inches long, inserted at the throat of the perianth-tube; anthers linear, small. *Style* finally overtopping the stamens.—*J. G. Baker.*

Fig. 1, Edge of leaf; 2, complete flower, cut open; 3, front view of anther; 4, back view of anther; 5, apex of style, *all more or less enlarged*; 6, whole plant *much reduced*.

TAB. 8481.

AGAVE HAYNALDII.

Mexico or Central America.

AMARYLLIDACEA. Tribe AGAVEAE.

AGAVE, Linn.; Benth. et Hook. f. *Gen. Plant.* vol. iii. p. 733.

Agave (§ *Littaea*) **Haynaldii**, *Tod. Hort. Bot. Pan.* vol. i. p. 88, t. 21; *Terracc. f. Pr. Contr. Monogr. Agav.* p. 25; *Baker, Handb. Amaryll.* p. 170; species ex affinitate *A. expatriatae*, Rose, sed differt foliis numerosioribus longioribus et inflorescentia altissima.

Frutex acaulis; rosula circiter 80-folia, 1–2 m. alta, 2 m. lata. *Folia* erecto patentia vel levissime incurvula, 9–11 dm. longa, lanceolato-ensiformia, longe acuminata et in spinam terminalem fere 3 cm. longam supra late canaliculatam subtriquetram exeuntia, supra medium 9–11 cm. lata, basin versus valde angustata cervice longo 5·5 cm. lato carnosio utrinque valde convexo et basi circiter 5 cm. crassa, medium versus planiuscula, superne subcanaliculata, tenuius coriaceo-carnosa, subtus convexa, utrinque obscure viridia nitida laevis, subtus sine lineis obscurioribus supra juvenilia tantum vitta pallidiore notata, margine angusto corneo primum castaneo dein cinereo aculeato continuo vel folii medio plerumque interrupto cincta, aculeis majusculis e basi latiore deltoideo-uncinatis saepe minoribus interjectis vel cum majoribus aggregatis, 5–9 mm. longis, basalibus minoribus crebrioribusque, summis remotioribus et sub apice folii tractu brevi deficientibus. *Inflorescentia* elata, valida, circiter 7·5 m. alta; pedunculus 1·5 m. longus, 8 cm. diametro, viridis levissime pruinosis, bracteis vacuis e basi 4–4·5 cm. lata abrupte angustatis convolutis reflexis apice pungentibus, inferioribus 30 cm. longis subremote vestitus; spica cylindrica longissima basi laxior superne densissima, alabastris glauco-viridibus, floribus expansis viridi-luteis; bractee filiformes reflexae, 20 mm. longae; flores plerumque 2-ni vel 3-ni, rarissime 4–8-ni, pedicellis 5–6 mm. longis crassis suffulti. *Perianthii* segmenta 19–22 mm. longa, carnosula, oblonga, obtusa, exteriora dorso crasse carinata, basi in tubum brevissimum extra 9–10 mm. latum 6-sulcatum connata, mox evanescentia et stamina amplexantia. *Filamenta* 5–5·3 cm. longa, pallide viridi-lutea, gracilia, antheris luteis 20–22 mm. longis. *Ovarium* subcylindraceum, 2–2·5 cm. longum, basi 7–8 mm. crassum, superne constrictum, pallide viride glauco-pruinosis; stylus demum 5·5 cm. longus, filamentis robustior; stigma paullo incrassatum, subtrilobum.—A. BERGER.

The *Agave* which the late Professor Todaro named *A. Haynaldii*, in honour of the distinguished botanist Archbishop Haynald, is one that flowered in 1878 in the garden of Mr. Whitacker at Ai Colli near Palermo, and was probably originally obtained from some collection in England. The plant from which our illustration has been prepared is one sent by Dr. H. Ross from the Palermo Botanic Garden in May 1897 to that of the late Sir T. Hanbury at La

FEBRUARY, 1918.



M.S. del. J.N. Fitch. Lith.

Viv. et. Brooks, Day & Son Lith.

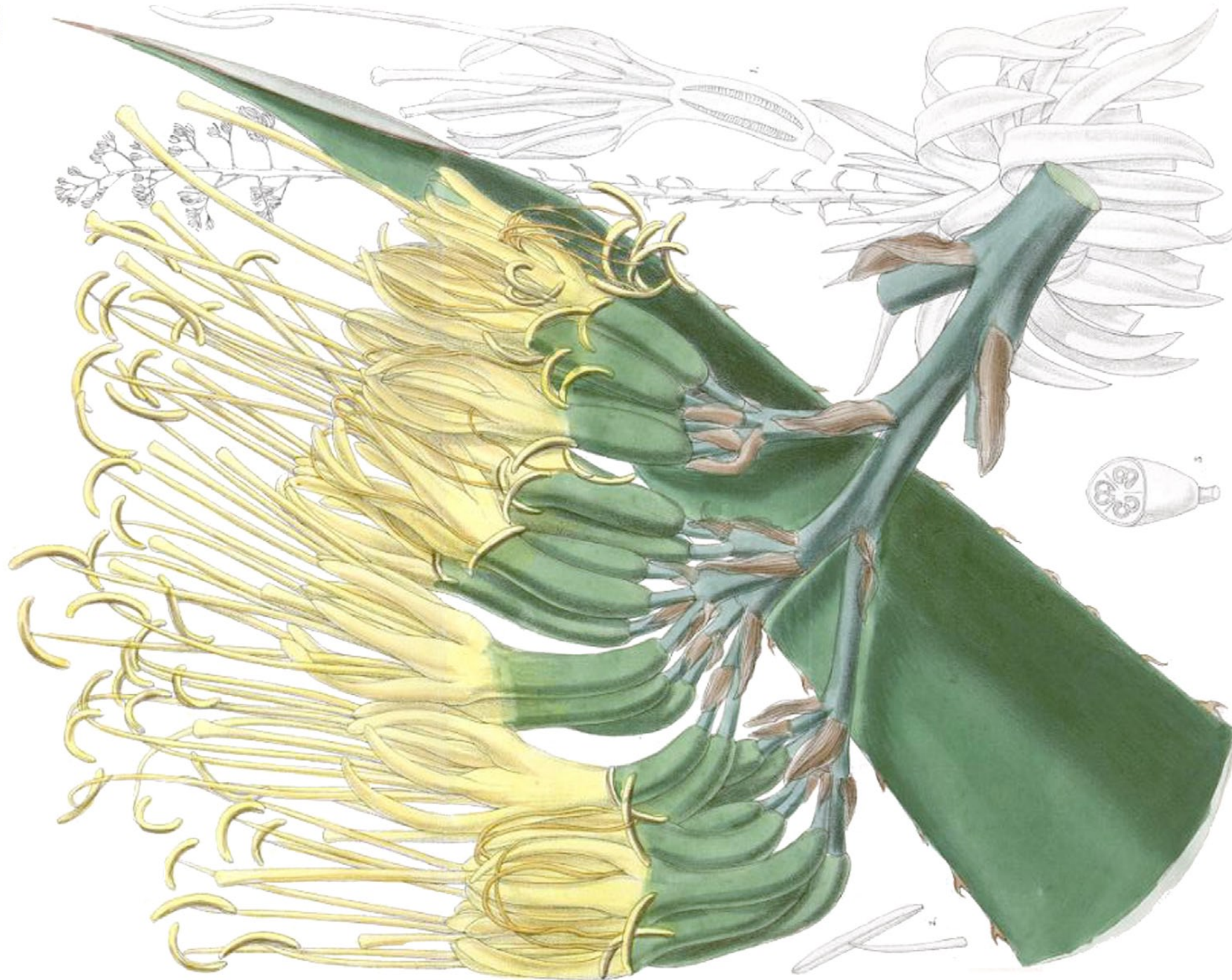
L. Reeve & Co. London.

Mortola. It may therefore be accepted as an authentic example of *A. Haynaldii*, though it is found on comparing the La Mortola plant with the description and figure supplied by Todaro that there is some degree of variability in the size, disposition and direction of the lateral spines and in the dimensions and arrangement of the flowers. The horny leaf-border is less continuous and is generally interrupted in the middle in the La Mortola example; its flowers, too, are somewhat smaller and are generally disposed in twos or threes, less often in fours; there are never, as in the original Palermo plant, as many as eight in one cluster. The species to which *A. Haynaldii* bears the greatest resemblance is that described in 1900 as *A. expatriata* by Dr. Rose; a comparison of the figures and descriptions of the two plants shows that they are very, perhaps too closely related. A member of the 'Marginatae' group of Littaeas, easily recognised by the horny border of the leaves and by the short perianth-tube with lobes which embrace the stamens as soon as the anthers are ripe, *A. Haynaldii* is readily distinguished from the others by its larger size. The La Mortola example here figured showed signs of flowering towards the end of September 1910, the spike pushing with considerable rapidity and the first flowers opening in November; the apical flowers opened in February 1911.

DESCRIPTION.—*Shrub*, stemless; rosette with about 80 leaves, some 6 ft. wide, 4 ft. high. *Leaves* erecto-patent or slightly incurved, $3\frac{1}{4}$ – $3\frac{1}{2}$ ft. long, 2 in. thick and very biconvex at the base, narrowed and flat towards the middle and somewhat channelled below the point, lanceolate-ensiform, about $3\frac{1}{2}$ – $4\frac{1}{2}$ in. wide above the middle, thence tapering gradually into a long point with a wide-channelled, nearly 3-quetrous, brown end-spine, about 1 in. long, constricted towards the base into a long neck, $2\frac{1}{8}$ in. wide, convex underneath but gradually thinner towards the point, coriaceous, dark glossy green, without darker lines on the back and only in young plants with a pale band on the upper surface; the margin with a spiny horny border, usually interrupted about the middle of the leaf, when young chestnut brown, soon becoming ash-grey, slightly repand between the spines, the lowest small and close, those of the

middle of the leaf $2\frac{1}{2}$ – $4\frac{1}{2}$ lin. long, deltoid-uncinate from a broader base, generally with an intercalated smaller, occasionally 1–2 or more aggregated with a larger, the upper spines more distant and smaller, the leaf-point for about 2–3 in. unarmed. *Inflorescence* a cylindric spike 22–23 ft. high; peduncle stout, $4\frac{1}{2}$ ft. high over 3 in. thick, with many reflexed subulate convolute scarious empty bracts, 8–13 in. long; flowers generally 2–3 together, rarely 4 or 8, greenish-yellow, the buds and all other parts of the inflorescence pruinose; bracts filiform, reflexed, pedicels very short, thick. *Perianth-segments* oblong, obtuse, fleshy, pale yellowish-green, $\frac{3}{4}$ –1 in. long, soon withering and embracing the stamens, the outer 3 with a thickened dorsal rib, connate below in a very short 6-furrowed tube, $\frac{2}{5}$ in. wide. *Stamens* inserted at the mouth of the tube; filaments erect, 2 in. long or longer; anthers yellow, under 1 in. long. *Ovary* cylindric, $\frac{3}{4}$ –1 in. long, 3– $3\frac{1}{2}$ lin. wide, narrowed into a short beak under the perianth-tube; style rather longer and stouter than the stamens; stigma slightly capitate, obscurely 3-lobed.

Fig. 1 and 2, anthers; 3, stigma; 4, sketch of an entire plant:—*all enlarged except 4, which is much reduced.*



Thomson, Fenzl, Day & Co. Lond.

L. Rowse & Co. Lond.

W. E. D. 1881

TAB. 6589.

AGAVE HOOKERI.

Native of Mexico.

Nat. Ord. AMARYLLIDACEÆ.—Tribe AGAVEÆ.

Genus AGAVE, Linn.; (*Kunth Enum.* vol. v. p. 818.)

AGAVE (Euagave) *Hookeri*; acaulis, foliis 30–40 dense rosulatis lanceolatis coriáceo-carnosis 4–5-pedaliibus viridibus (junioribus solum leviter glauco tinctis) e medio 6–8 poll. lato ad spinam validam terminalem secus margines breviter decurrentem sensim angustatis, aculeis marginalibus corneis brunneis deltoideo-cuspidatis modice validis, pedunculo crasso 30-pedali, floribus in paniculam rhomboideam ramis dense corymbosis dispositis, pedicellis semipollicaribus, bracteolis scariosis lanceolatis, ovario cylindrico-trigono sesquipollicari, perianthii tubo brevissimo, segmentis lanceolatis luteis ovario æquilongis, filamentis limbo duplo longioribus, antheris magnis linearibus, stylo demum staminibus æquilongo.

A. Hookeri, Jacobi in *Hamburg Gartenzeit.* vol. xxii. p. 168; *Monogr.* p. 219; Baker in *Gard. Chron.* 1877, vol. ii. p. 718.

A. Fenzliana, Jacobi in *Hamburg Gartenzeit.* vol. xxii. p. 170.

A. inæquidens, K. Koch in *Wochenschrift*, 1860, p. 28 ?

This is one of the giant Agaves of the *Americana* group, which flowered for the first time, so far as botanical records extend, at Kew last year, and our drawing is made from a specimen which, for the six winter months, was one of the principal attractions of the Palm House. When the veteran monographer of the genus *Agave*, Lieutenant-General von Jacobi, visited Kew about the year 1865, he found in our collection three new species, which he named *Hookeri*, *Thomsoniana*, and *Smithiana*. The original type of *Hookeri*, from which his diagnosis and description, which were published in the “Hamburg Gartenzeitung” in 1866, were drawn up, we still possess, but it has never flowered. The present specimen belonged to Mr. Wilson Saunders, and differs a little from the type by its smaller and more distant prickles. I feel satisfied that Jacobi’s *Agave Fenzliana* is the same species, and think they will most likely both prove

NOVEMBER 1ST, 1881.

to be conspecific with the *A. inæquidens* of Dr. Karl Koch, described from flowerless specimens in the Berlin Botanic Garden in 1860.

DESCR. Acaulescent. *Leaves* thirty or forty in a rosette, lanceolate, firm in texture for the genus, four or five feet long, six to nine inches broad at the middle, green with only a slight glaucous tinge in a young stage, narrowed gradually to a pungent brown end-spine above an inch long, which is decurrent along the edges as a narrow entire brown horny line, for four or six inches, a quarter of an inch thick in the middle, three or four inches thick at the base, the marginal prickles deltoid-cuspidate, dark brown, an eighth or a six of an inch long. *Inflorescence* thirty feet long, the peduncle four or five inches thick at the base, furnished with numerous lanceolate squarrose bract-leaves. *Panicle* rhomboid, four or five feet long by a couple of feet in diameter; flowers arranged in dense corymbs at the end of the spreading or ascending branches; pedicels reaching half an inch in length; bracteoles lanceolate, scariose. *Ovary* cylindrical-trigonous, green, an inch and a half long; perianth-tube very short; segments lanceolate, pale yellow, as long as the ovary. *Filaments* twice as long as the perianth-segments; anthers linear, under an inch long. *Style* not developed till after the anthers, finally as long as the filaments.—*J. G. Baker.*

Fig. 1, Flower, *natural size*; 2, anther, *enlarged*; 3, vertical section of developed ovary, *natural size*.

TAB. 6511.

AGAVE HORRIDA.

Native of Mexico.

Nat. Ord. AMARYLLIDACEÆ.—Sub-order AGAVEÆ.

Genus AGAVE, Linn.; (*Kunth Enum.* vol. v. p. 818.)

AGAVE (Littæa) *horrida*; acaulis, foliis 30–40 dense rosulatis ensiformibus sub-petalibus apice spina pungente corneo magna armatis margine lato corneo griseo cinctis aculeis magnis distantibus inæqualibus armato, pedunculo foliis 3–4-plo superante, bracteis vacuis subulatis squarrosis, floribus in paniculam subspicatam densam cylindricam aggregatis geminis breviter pedunculatis et pedicellatis, bracteis parvis linearibus, ovario cylindrico-trigono, tubo brevi late infundibulari, segmentis oblongis purpureo-viridibus, staminibus ad tubi faucem insertis segmentis 2–3-plo longioribus, stylo demum filamentis æquilongo.

A. horrida, Lemaire; *Jacobi Monog.* pp. 43 and 207; *Nachtrage*, p. 15; *K. Koch in Wochenschrift*, vol. xii. p. 177; *Baker in Gard. Chron.* n. s. vol. vii. (1877), p. 621, fig. 99.

A. Regeliana and *Desmetiana*, *Hort. non Jacobi*.

This is one of the best known of the smaller Agaves with a distinct continuous horny border to the leaf. It was introduced from Mexico by Verschaffelt in 1862, and is now to be found in all the more complete collections, but usually under the name either of *Regeliana* or *Desmetiana*, both of which rightfully belong to species of another section. I am not aware that there is any record of its having flowered. Our drawing was made from a plant in the collection so liberally lent to Kew by J. T. Peacock, Esq., of Hammersmith, which has been on exhibition for a considerable time in the south wing of the Temperate House, where it flowered in the spring of this present year. The flowers are notably protogynous, the style not reaching its full length, nor the stigma becoming papillose, till long after the anthers of the same flower are withered. I believe that *A. triangularis*, *grandidentata*, and *Maigretiana* of Jacobi, and *A. Gilbeyi* of Haage and Schmidt, will all prove to be forms of this species.

AUGUST 1ST, 1880.



DESCR. Acaulescent. *Leaves* thirty or forty in a dense rosette, ensiform, about a foot long, two inches broad, rigid in texture, flat and bright green on the face, duller green on the back, the point armed with a large pungent spine, the edges margined with a continuous distinct persistent grey horny border, which is furnished with numerous irregular large falcate brown horny prickles. *Peduncle* three or four times as long as the leaves, furnished with abundant subulate squarrose empty bracts. *Spike* cylindrical, about as long as the peduncle, seven or eight inches in diameter when the flowers are fully expanded; flowers arranged in pairs, each flower with a distinct pedicel, and each pair with a short peduncle and small linear bract. *Ovary* green, cylindrical-trigonous, under an inch long; tube funnel-shaped, a quarter of an inch long; segments oblong, green tinged with claret-purple, as long as the ovary. *Stamens* inserted at the throat of the perianth-tube; filaments claret-purple, two inches long; anthers linear-oblong, half an inch long. *Style* finally as long as the filaments, but not till after the anthers have withered.—*J. G. Baker*.

Fig. 1, View of plant—*much reduced*; 2 and 3, portions of leaves; 3, flowers; 4, section of flower:—*all of the natural size*.

TAB. 5893.

AGAVE IXTLIOIDES.

Native of Mexico ?

Nat. Ord. AMARYLLIDÆ.—Tribe AGAVÆ.

Genus AGAVE, Linn.; (Endl. Gen. Plant., p. 181).



AGAVE *ixtlioides*; acaulis, foliis ad 30 $1\frac{1}{2}$ –2 ped. longis medio $2\frac{1}{2}$ – $3\frac{1}{2}$ poll. basi $\frac{1}{2}$ poll. latis lineari-lanceolatis in apicem pungentem brunneam sensim attenuatis immarginatis, infra medium planis supra medium concavis, junioribus intense glaucis, spinis parvis $\frac{1}{6}$ – $\frac{1}{3}$ poll. distantibus falcatis adscendentibus brunneis, scapo 8–10-pedali, bracteis laxis erectis, panicle ramis 8–10 patentibus, floribus laxè corymbosis, perianthii tubo 1 poll. longo viridi segmentis lineari-oblongis obtusis flavo-viridibus subæquilongis, filamentis robustis, antheris magnis linearibus stramineis, stylo robusto staminibus multo breviorè, stigmate subdilatato obtuso.

AGAVE *ixtlioides*, Ch. Lemaire in *Hamburg Garten und Blumenzeit.* vol. xxii. p. 214 (1866).

AGAVE *fourcroydes*; Lemaire, *l'Illust. Hortic.* vol. xi. p. 65 (1864) non Jacobi.

Of all cultivated plants none are more difficult to name accurately than the species of *Agave*, partly because of the imperfection of the published descriptions, and more from the impossibility of fixing their characters by words. The species before us is one that has long been in cultivation at Kew, but never flowered till January of the present year, when it threw up a scape twelve feet high. It agrees with the meagre character of the foliage (all that is described) of *A. ixtlioides*, itself a species of confused synonymy, and hardly distinguished by words from *A. fourcroydes* Jacobi; as which, according to Major-General Jacobi, it was first described by Lemaire. In other words, according to Jacobi, who is the great authority on this genus, this plant was first described by Lemaire as *A. fourcroydes* (L'III. Hortic., xi. 65), a name for which Jacobi

subsequently substituted that of *ixtlioides* (Hamburg Gartenflor., xxii. 214), with the sanction of Lemaire, under whose authority it stands, stating at the same time as his reason for this, that it differs from his *fourcroydes*. The true *fourcroydes* of Jacobi is described by himself (Hamburg Gartenflor., xxi. 167); and to it is referred as a synonym *A. ixtly*, C. Koch, not *A. ixtly* of Haworth; and in Jacobi's general enumeration of *Agaves* (Regel Gartenflor., xvii. 348) *A. ixtlioides* and *fourcroydes* stand next one another in one section, whilst *A. ixtly* is placed in another; but judging from the descriptions all three may well belong to one species.

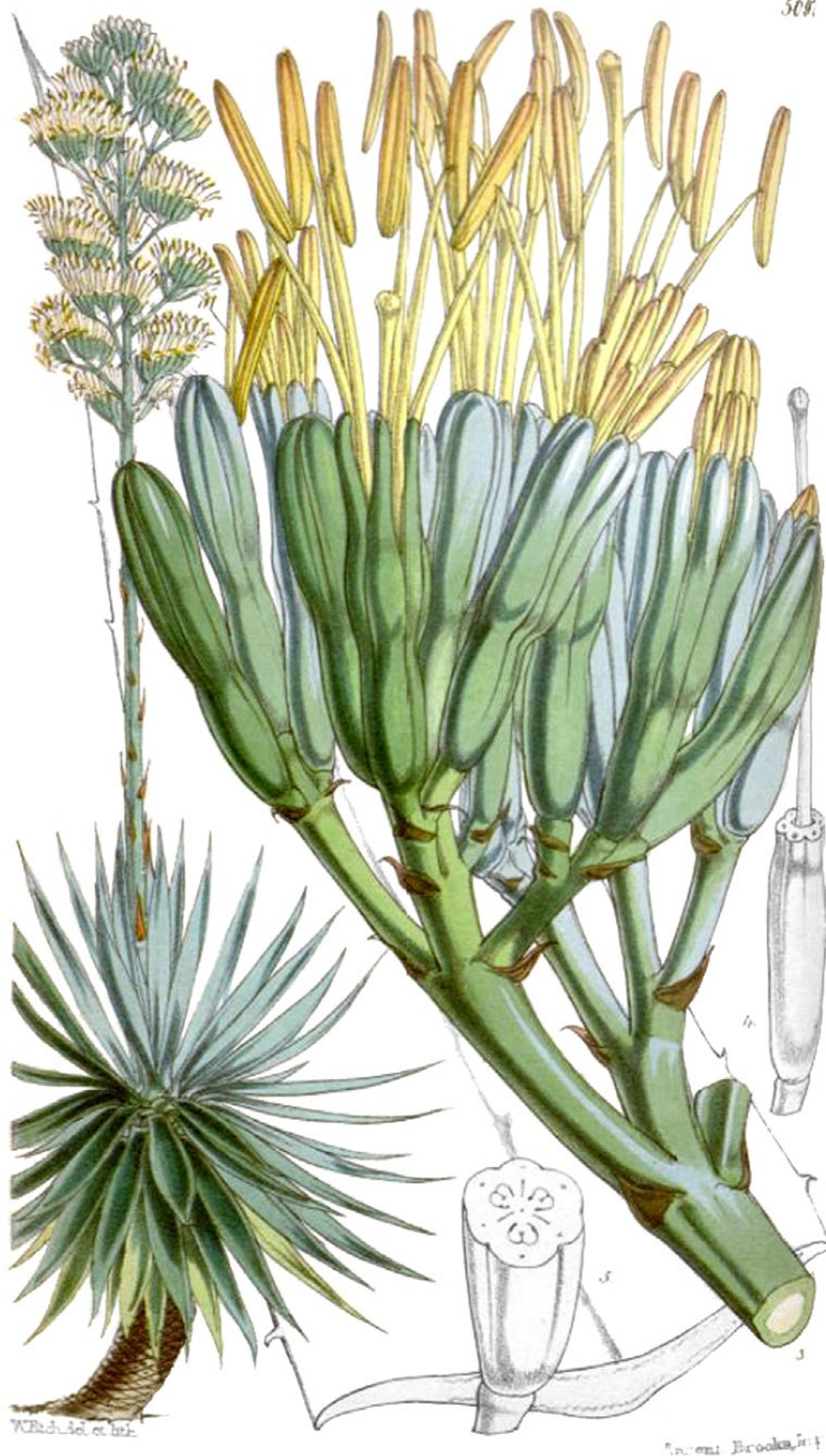
DESCR. *Stem* very short; constricted above the root. *Leaves* thirty to forty, forming a spreading rosette one to two feet across, dull green, very glaucous when young, eighteen to twenty inches long, two and a half to three and a half inches broad in the middle, thence narrowed upwards to a hard brown point, and downwards to a contracted base one and a half inches in diameter; upper surface of the upper half concave, of the lower half flat; spines small, brown, curved upwards. *Scape* ten to twelve feet high, slender, strict, sparingly covered with great bracts. *Panicle* two feet long, with about ten spreading branches a span long, each bearing towards its extremity a corymb of pale yellow-green sessile flowers; bracts at the base of the branch broadly ovate, acute, brown, one inch long; bracteoles much smaller and broader. *Flowers* two inches long. *Perianth-tube* cylindric-oblong, green, rather shorter than the oblong yellowish green perianth limb; segments linear-oblong, obtuse, very thick. *Filaments* very stout, pale, twice as long as the perianth segments; anthers one inch long, yellow. *Style* short, clubbed at the rounded stigmatic end.—*J. D. H.*

Fig. 1, Plant; 2, leaf, *reduced*; 3, portion of leaf; 4, portion of panicle: both of *natural size*.

AGAVE JACQUINIANA.

Jacquin's Agave.

Nat. Ord. AMARYLLIDÆ.—HEXANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 4934.)

AGAVE *Jacquiniana*; caulescens, foliis lineari-lanceolatis acuminatis crassiusculis remote dentato-spinosis, spinis curvatis, scapo 10–12-pedali bracteato, florum fasciculis densis, perianthii viridis tubo (cum ovario adnato) teretiblongo 6-sulcato, limbi laciniis lineari-oblongis erectis in tubum subconniventibus canaliculatis obtusis, filamentis sepala plus quam duplo excedentibus stylum æquantibus, capsula urceolata obtusa trigona, panicula demum sobolifera.

AGAVE *Jacquiniana*. Schultes, *Syst. Veget.* 7. p. 727. Kunth, *En. Plant.* v. 5. p. 827.

AGAVE *lurida*. Jacq. *Coll.* v. 4. p. 94. t. 1. (excl. syn.) Salm-Dyck, *Hort.* 1834, p. 302.

The true *Agave lurida* of Hortus Kewensis, ed. 1. v. 1. p. 472, and ed. 2. v. 2. p. 302, is figured and described by Mr. Gawler (Bot. Mag. t. 1522) from the original Kew plant, which has since died. This is the *Agave Vera-Cruz* of Miller, Gard. Dict. ed. 8. n. 7; and Mr. Gawler has accurately pointed out the differences between this plant and the *Agave lurida* of Jacquin's 'Collectanea Botanica,' v. 4. p. 92. t. 1. In the original *Agave lurida* the flowers are lax and distant, twice the size of those of Jacquin's *Agave*; the tube (with the adnate ovary) is almost elongato-cylindrical, constricted above the base, longer than the sepals, which are broad-lanceolate, acuminate, concave, and spreading; the filaments of the stamens are quite erect, and green as well as the anthers. Jacquin's *Agave* has densely crowded flowers, the ovary six-furrowed, shorter than the sepals, which latter are quite erect and almost connivent, the stamens are spreading and yellow, and the peduncles are soboliferous or viviparous. About ten or twelve years since, we received an

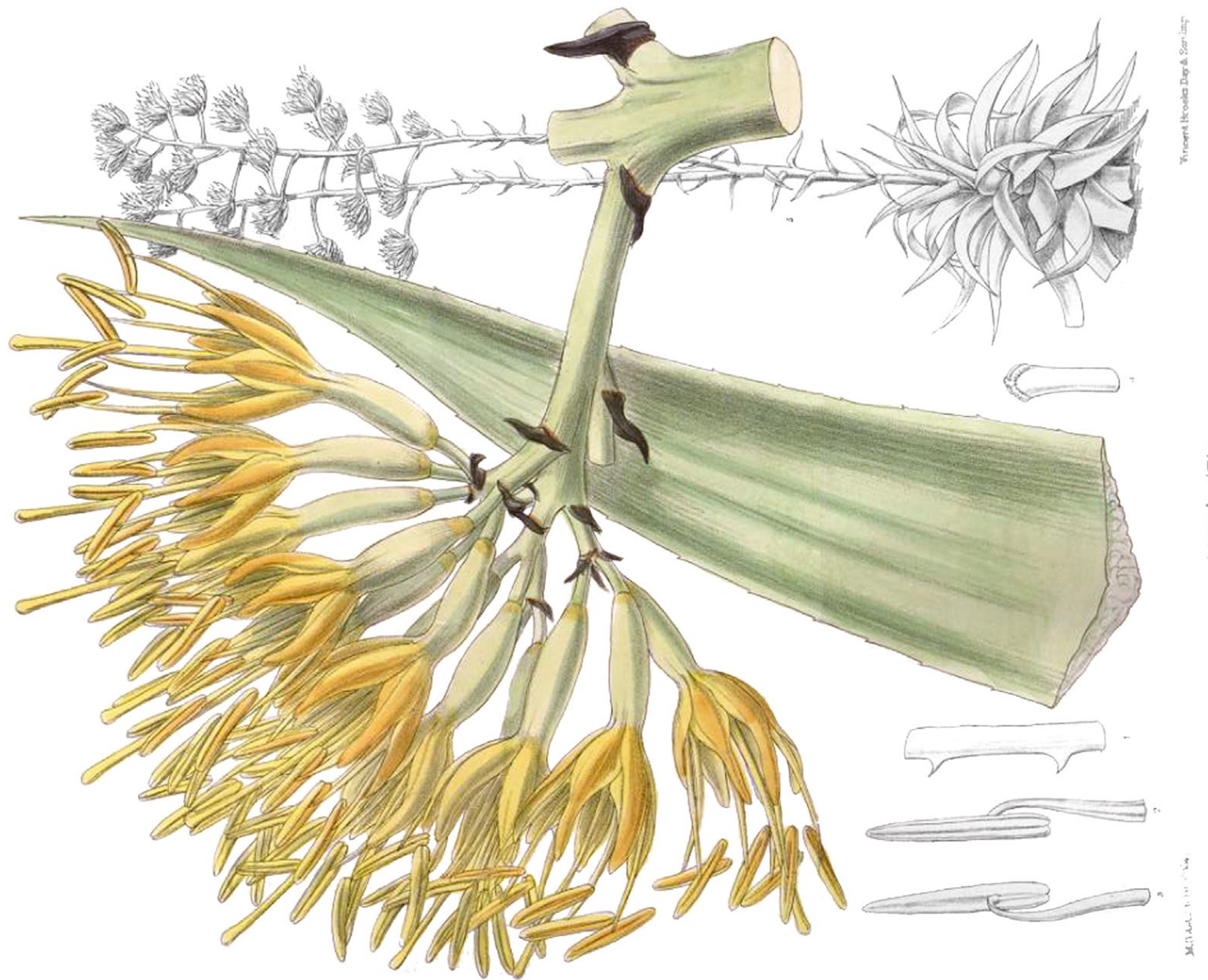
FEBRUARY 1ST, 1859.

Agave from Mrs. M'Donald, of Honduras (which accompanied the noble-flowered *Cereus Macdonaldiæ*, Bot. Mag. t. 4707); and this, upon flowering in our Palm-house, in the autumn of 1858, corresponded in every particular with the figured description of Jacquin. That *Agave*, Schultes, in accordance with the views expressed by Mr. Gawler, has named *Agave Jacquiniana*. The fruit too, which is now (Jan. 1859) fully formed, precisely accords with that figured in the 'Collectanea Botanica,' and that fruit is not a little remarkable, being exactly urceolate, with a very contracted neck.

The above remarks may serve as a substitute for any long or tedious description.

DESCR. *Stem* ascending, a foot and a half high, scarred with the remains of fallen leaves. The perfect leaves form a crown, and are from two and a half to three feet long, narrow-lanceolate, pungently acuminate, spreading in all directions, the superior and younger ones erect, the middle ones horizontal, the inferior ones reflexed, remotely dentato-spinose with curved *spines*. *Scape* about twelve feet long, stout in proportion, quite erect, firm and rigid, almost scaly with withered *bracteas*. *Panicle* compound. *Pedicels* stout, dichotomously divided. *Flowers* geminate or ternate, bracteolate, some quite sessile. *Perianth* quite green, little more than two inches long; the tubular portion is oblong-oval, six-furrowed; the free portion, or *sepals*, more than half as long again as the tube, linear-oblong, channelled, obtuse, quite erect, and connivent, pressing as it were against the yellow, much exserted *stamens*; these stamens are twice as long as the sepals, spreading. *Anthers* very large, full-yellow, versatile. *Style* as long as the filaments. *Stigma* obscurely three-lobed. *Fruit*, or *capsule*, when fully formed, an inch and a half long, urceolate, almost black when ripe, with a very contracted neck, three-celled, three-valved, containing in each cell several black angular *seeds*.

Fig. 1. Flowering plant, on a very reduced scale. 2. Apex of a leaf, *nat. size*. Portion of a panicle, with flowers also, *nat. size*. 4. Ovary and style, after the sepals have fallen away. 5. Transverse section of the same:—*slightly magnified*.



TAB. 7532.
AGAVE KEWENSIS.
Native of Mexico.

Nat. Ord. AMARYLLIDEA.—Tribe AGAVEÆ.

Genus AGAVE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 738.)

AGAVE (Euagave) *kewensis*; breviter caulescens, foliis 30–40 laxe rosulatis oblongo-lanceolatis carnosio-coriaceis viridibus, spina terminali debili vix pungente spinulis marginalibus parvis deltoideis brunneis, pedunculo valido elongato foliis multis rudimentariis lanceolatis prædito, floribus in paniculam laxam dispositis, ramis patulis apice multifloris, pedicellis brevibus, bracteis parvis ovatis scariosis, ovario cylindrico, perianthio lutescente tubo brevi infundibulari, lobis ovato-lanceolatis, staminibus lobis 2-3-plo longioribus, stylo staminibus longiore.

A. kewensis, *Jacobi Monogr. Agave*, p. 242. *Baker in Gard. Chron.* 1897, vol. i. p. 68; *Handb. Amaryllid.* p. 242.

The present *Agave* belongs to the group with comparatively fleshy leaves, the species of which are less hardy and much rarer in cultivation than *A. americana*, *A. rigida*, and their allies. Of this group it is the finest and largest species which is known. When General Jacobi visited the Royal Gardens at Kew in 1865 he at once recognized it as a new and well-marked species, and shortly afterwards described it in his monograph under the name of *Agave kewensis*. It did not flower till 1895, and then proved to have the *americana* type of panicle. The plant did not perfect seed, and died after flowering, but the peduncle was cut and kept, and fortunately, as it was the only plant known, developed a number of bulbillæ after the flowers faded. These have been planted, and it is hoped that a number of young plants raised from them will shortly be ready for distribution.

DESCR.—*Trunk* produced to a length of half a foot below the leaves. *Leaves* oblong-lanceolate, thirty or forty in a rather lax rosette, three or four feet long, seven or eight inches broad at the middle, narrowed gradually to four inches above the dilated base, bright green on both surfaces, concave on the face in the middle; end spine weak and scarcely pungent; marginal spinules

MAY 1ST, 1897.

small, deltoid, brown. *Peduncle* fifteen feet long, accidentally forked in the present specimen, with many ascending lanceolate reduced leaves. *Inflorescence* laxly paniced, rather shorter than the peduncle; branches spreading, bearing a cluster of many flowers at the apex; pedicels short; bracts small, ovate, scariose. *Ovary* cylindrical, an inch long. *Perianth* yellowish; tube short, funnel-shaped; lobes ovate-lanceolate, ascending, nearly an inch long. *Stamens* more than twice as long as the perianth-lobes; anthers linear. *Style* overtopping the anthers.—*J. G. Baker.*

Fig. 1, Marginal spinules; 2, front view of anther; 3, back view of anther; 4, apex of style;—*all enlarged*; 5, whole plant, *much reduced*.



Virens. Involucrum & San. ing.

L. Thoms & C. P. L. L. L.

M. S. L. L. L. L. L. L.

TAB. 7477.
AGAVE LAXIFOLIA.
Native of Mexico.

Nat. Ord. AMARYLLIDÆ.—Tribe AGAVÆ.

Genus AGAVE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 738.)

AGAVE (*Euagave*) *laxifolia*; breviter caulescens, foliis 20—30 laxe rosulatis oblongo-lanceolatis crassis coriaceis facie sordide viridibus dorso pallide viridibus spina parva brunnea pungente terminatis, spinulis marginalibus parvis deltoideis apice brunneis, pedunculo valido elongato, floribus in paniculam laxam ramis corymbosis dispositis, bracteis parvis deltoideis, pedicellis apice elongatis, ovario cylindrico, perianthii tubo infundibulari limbi lobis lanceolatis basi deltoideis, staminibus limbo 2—3-plo. longioribus, antheris linearibus magnis.

A. laxifolia, *Baker*.

This *Agave* has been cultivated for many years in the Royal Gardens at Kew, and flowered for the first time in the summer of 1895. It was received as a variety of *A. mexicana*, but it differs widely from all the forms of that species by its laxly disposed rosette of leaves, which are green on both sides even in an early stage, and by its smaller spinules. Its place is in the section *Rigidæ*, in the neighbourhood of *A. excelsa*, Jacobi. The flowers give out a smell exactly like that of mice. As in many other species the style does not grow out to its full length till after the anthers of the same flower are faded.

DESCR.—Shortly caulescent. *Leaves* twenty or thirty in a lax rosette, oblong-lanceolate, firm in texture, one and a half or two feet long, three inches broad at the middle, by half as much above the dilated base, above which they are half an inch in thickness, dull green on the face, paler green on the back, without any glaucous tinge, even in an early stage, with a small brown pungent end-spine, and copious small deltoid marginal spinules, tipped with brown. *Peduncle* stout, four or five feet long. *Inflorescence* a lax panicle about as long as the peduncle, with corymbose branches; bracts small, deltoid; pedicels half an inch long, articulated at the tip. *Ovary* cylindrical, green, an inch and a half long. *Perianth-tube* funnel-shaped, half an inch

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long; lobes green, half as long again as the tube. *Stamens* inserted at the throat of the perianth-tube, two inches long; anthers large, linear. *Style* finally overtopping the anthers.—*J. G. Baker.*

Fig. 1, a flower cut open; 2, front view of anther; 3, back view of anther:—*All enlarged*; 4, entire plant, *much reduced*.

AGAVE LURIDA (α .) BROAD-LEAVED VERA
CRUZ AGAVE.

Generic Character.—*Vide supra* No. 1157

Specific Character and Synonyms.

AGAVE *lurida*; (*subcaudescens*;) foliis glaucis dentato-spinosis; caule paniculato; racemulis laxe fasciculatis; corolla horizontali, limbo turbinato-patulo, laciniis ovato-lanceolatis; germine cylindraceo corollam æquante, prope basin contractiore; flaminibus styloque dimidio magisve exsertis; stigmate capitato-trilobo, antheras transeunte. G.

AGAVE *lurida*. Hort. Kew. 1. 472. ed. 2. 2. 302. Willd. Sp. Pl. 2. 193; (*excluso in ultimis duobus Jaquino.*) Mart. Mill. Dill. n. 4.

AGAVE *Vera Cruz*. Mill. ed. 8. n. 7.

ALOE americana ex vera cruce foliis latioribus glaucis. Hort. Beaumont. p. 4; (*nec out Millero perperam H. L.*)

ALOE americana fobolifera. Herm. Hort. Lugd. 16. tab. 17.? (*minus recte a Willdenovio ad viviparam allegata.*)

(β .) foliis angustioribus.

AGAVE *rigida*. Mill. Dict. ed. 8. n. 8.

ALOE americana ex vera cruce foliis angustioribus minus glaucis. Hort. Beaum. p. 4.



The species first received the title of *Vera cruz* from MILLER, in the eighth edition of his Dictionary, and was afterwards adopted into the Hortus Kewensis by that of *lurida*, together with the *rigida* of the same, as its variety. But so slender and obscure is the information in either of these works on this head, that we are left to tradition to come at what plant was intended by them. Our drawing was taken from a part of a specimen that bloomed the summer before last in the Kew Gardens, in which the present superintendent, Mr. Arrow, tells us it had always been considered as their *lurida*; and it is but fair to give him credit for knowing well the plants which he had become acquainted

acquainted with while under the care of his father, whom he succeeded in office. His father is allowed to have been very exactly acquainted with the plants of MILLER, his contemporary and instructor; and the result of that acquaintance we obtain in the place we have cited from the first edition of the catalogue of those gardens, to which work his name is prefixed. Here we must rest the claims of our plant to specific identity with the original *lurida*. In the second edition of the Hortus Kewensis, the character of "stylo filamentis brevior" has been added since the publication of the first. This has been done under the impression that it was the same with the *lurida* of JACQUIN, which had appeared meanwhile; but its being so, upon a comparison of the figures that have been given of each, appears to us impossible. In that the inflorescence is close and ascending, the corolla nearly upright and twice smaller, the segments linear-ligulate or narrow oblong, blunt, tubularly connivent, ending incurvedly, twice longer than the germen, and the style considerably shorter than the stamens, which are also far divergent. JACQUIN says, that his species was known in the continental gardens by the appellation of the *Vera Cruz Aloe*; and we suspect that this circumstance decided with him its being the Kew *lurida*. His plant seems to us to approach nearer to *americana* than ours, which is nearer akin to the FOURCROË. We did not see the plant while in bloom, nor any part of the specimen from which the drawing was made; and can only learn from those that did, that the flower-stem was about twelve feet high, and that the plant altogether made a very fine appearance. A native of South-America. Requires to be kept in the dry stove. Like its larger congeners, rarely known to blossom in our collections.

G.

TAB. 5122.

AGAVE MACULOSA.

Spotted-leaved dwarf Agave.

Nat. Ord. AMARYLLIDÆ.—HEXANDRIA MONOGYNIA.

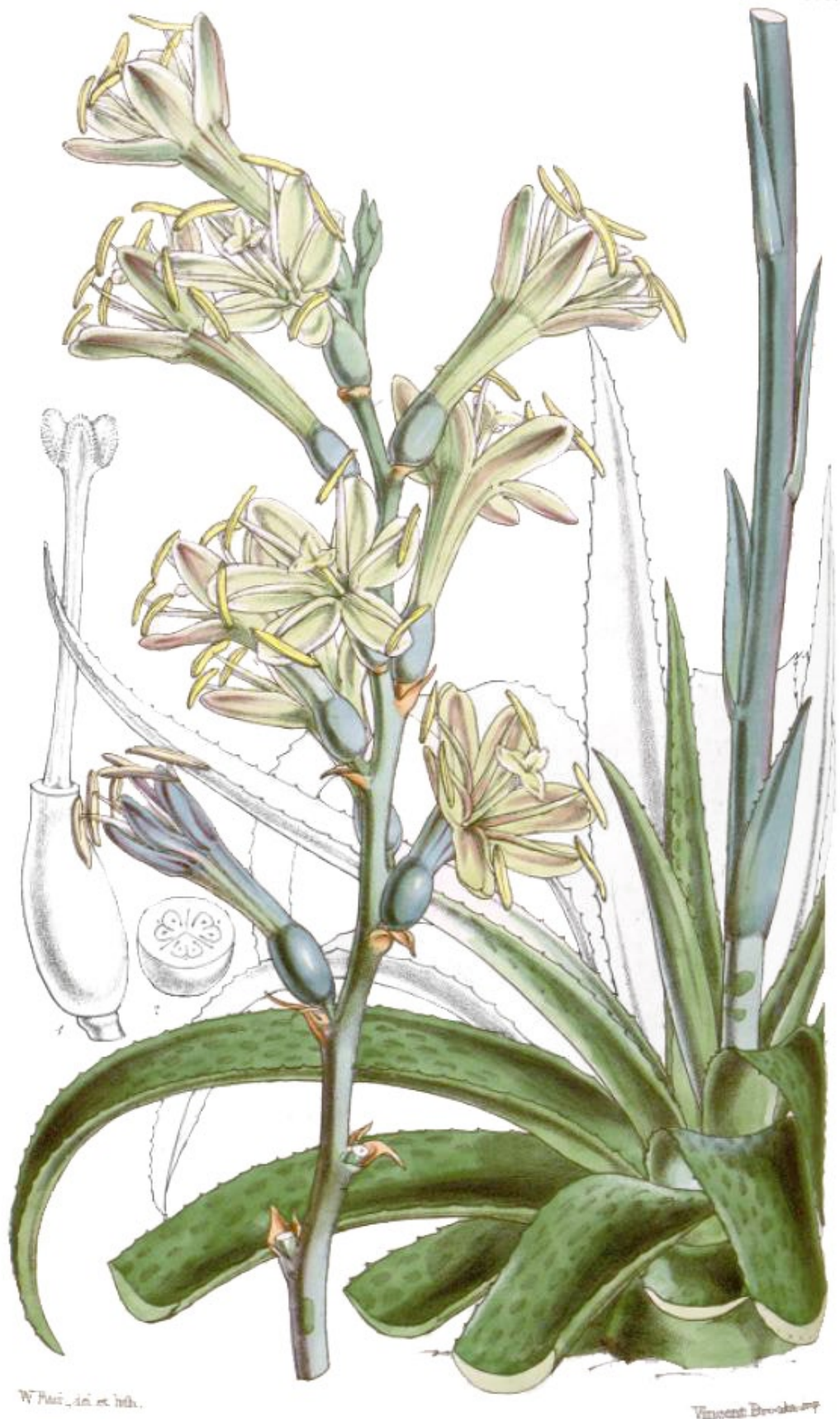
Gen. Char. (Vide supra, TAB. 4934.)

AGAVE maculosa; humilis acaulis, foliis lanceolato-subulatis carnosis cartilagineo-denticulatis canaliculatis maculatis, scapo bracteato, bracteis appressis, spica simplici laxiflora, bracteolis parvis membranaceis, perianthii tubo recto angulato, limbi laciniis tubum subsequantibus patentibus, staminibus longitudine laciniarum, stigmatis lobis 3 maximis.

A species entirely new, as far as can be learned from the very imperfect descriptions of the individuals of the genus *Agave* in our books. The Kew Gardens owe the possession of it to the Horticultural Society of London, who received it from Texas. Its nearest affinity is probably with *Agave saponaria* of Dr. Lindley, from Guatemala, but that has leaves entire at the margins, and very different in shape and texture, the flowers larger, the tube curved, and the stamens as long as the entire flower. Our species flowers in September.

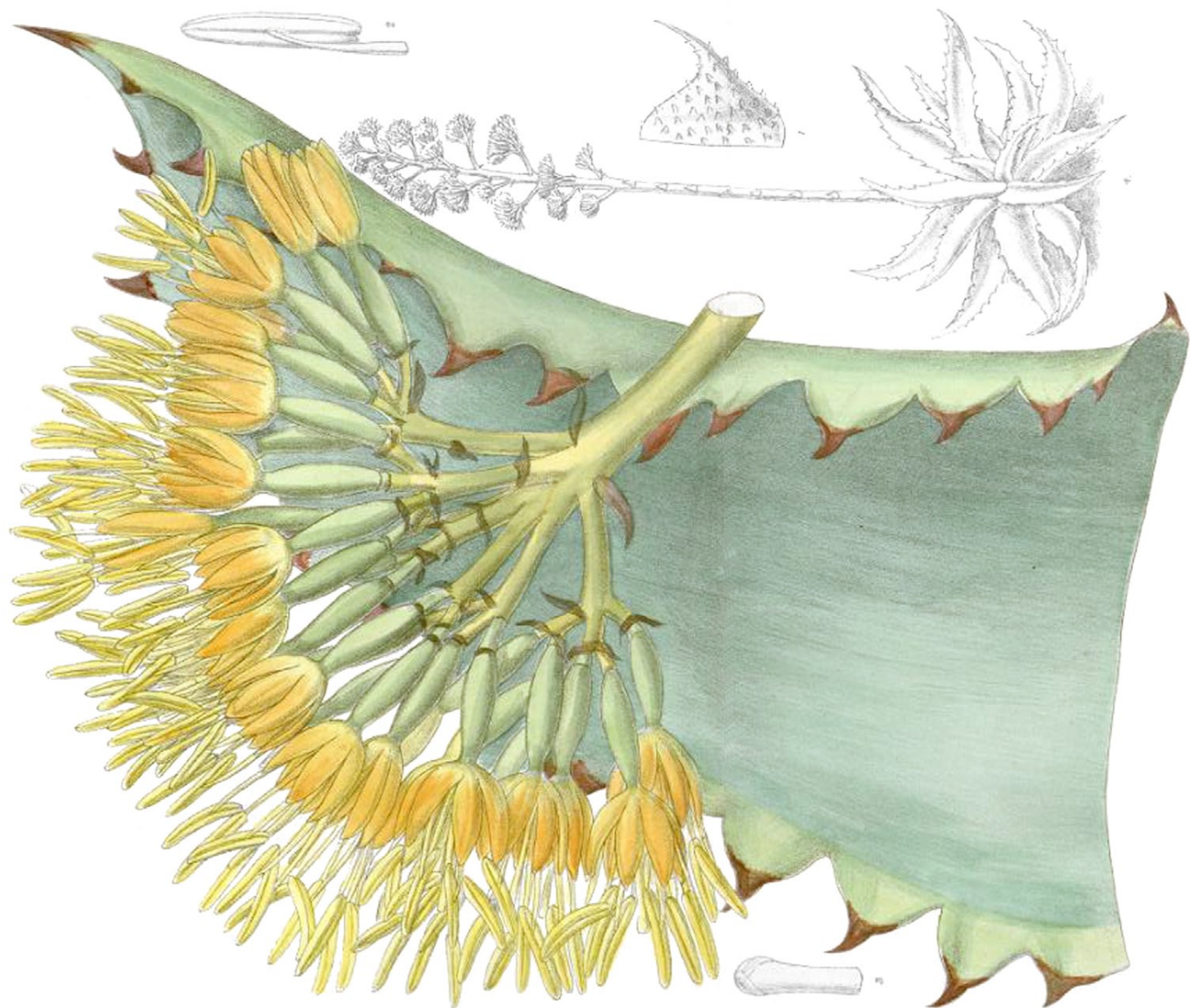
DESCR. Dwarf in stature, stemless. The *leaves* are rosulate, four to six inches long, thick and fleshy, lanceolato-subulate, amplexicaul at the base, recurved, channelled for the whole length, the margin with small cartilaginous teeth. *Scape* central, a foot to a foot and a half long, leafy below, leaves gradually passing into leaf-like *bracts*, appressed to the rounded scape. *Spike* six to eight inches long. *Flowers* ten to twelve, rather distant, bracteolate; *bracteoles* brown, small, membranaceous. *Ovary* inferior, oval, almost quite sessile. *Tube* of the *perianth* green, tinged with red, much longer than the ovary, straight; *limb* of six, spreading, oblong segments, white, with a broad brownish-green dorsal line, white within, reddish-yellow in decay. *Stamens* six. *Filaments* rather thick, scarcely longer than the

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laciniæ of the perianth. *Anthers* linear, versatile, yellow. *Style* stout, a little longer than the tube. *Stigma* of three large, divergent lobes, velvety at the margin.

Fig. 1. Flowers with the floral covering removed. 2. Transverse section of an ovary:—*magnified*.



TAB. 8442.

AGAVE MARMORATA.

Mexico.

AMARYLLIDACEAE. Tribe AGAVEAE.

AGAVE, Linn.; Benth. et Hook.f. Gen. Plant. vol. iii. p. 733.

Agave (Euagave) **marmorata**, Roetzl in Belg. Hort. 1883, p. 238; Baker Handb, Amaryll. p. 179; a speciebus ceteris subsectionis *Americanae* nuneupatae differt foliis glaucissimis asperrimis floribusque parvis jucunde luteis.

Frutex acaulis, rosula simplex usque 2 m. diametro et 1 m. fere alta, foliis circiter 30 eleganter patenti-recurvis composita. *Folia* lanceolata, 1·05–1·1 m. longa et 25–27 cm. supra medium lata, basin versus ad 14 cm. angustata, basi biconvexa 6–8 cm. crassa praesertim subtus carinato-convexa, a medio marginibus incurvis subundulatis late et profunde canaliculata, glauca vel caesia, defloratione tantum viridescencia, utriusque—praesertim subtus—asperissima, a basi usque apicem repandodentata, aculei validi, irregulares, deltoideo-cuspidati, cornei, brunnei, aspei, basi carnosae deltoideae vel ovatae insidentes, sinibus profundis rotundatis vel acutis separati, majores 20–50 mm. distantes et 15–20 mm. longi saepissime minoribus interjectis, inferiores et summi sensim minores ex margine recto vix repando; spina terminalis 20 mm. longa, griseo-brunnea, subulata, haud decurrens, asperissima. *Inflorescentiae* 3·75 m. altae; pedunculus pro rata plantae paullum robustus, 1·95 m. altus, viridis, basi bracteis foliaceis paucis munitus, superne bracteis vacuis deltoideis acuminatis scariosis circiter 15–16 cm. longis remotis onustus; panicula oblongo-cylindracea, circiter 1·8 m. longis et 55 cm. lata, ramis circiter 26 erecto-patentibus apice tripartitis majoribus 25 cm. longis; flores dense aggregati, parvi, jucunde lutei. *Pedicelli* brevissimi; bractee minutae, deltoideae, mox siccantes. *Perianthii* segmenta campanulato-conniventia, erecta, basi tantum in tubum brevem connata, apice mox siccantia, carnosula, laete lutea, exteriora ovato-lanceolata, acutiuscula, dorso convexa, intus late canaliculata, 16–18 mm. longa et 6 mm. lata, interiora breviora, obtusiora et latiora, dorso carinata, intus profunde canaliculata; stamina imo basi tubi affixa, filamenta lutea inaequalia, 3–3·5 cm. longa, antherae 16 mm. longae, luteae. *Ovarium* 20–22 mm. longum, 6 mm. latum, laete et nitide viride, subtrigono-cylindraceum utrinque attenuatum, sub tubo 6-sulcatum; stylus demum 35 mm. longus, luteus, stigma subtrilobum capitatum.—A. BERGER.

Agave marmorata was collected by Roetzl in the Province of Tehuacan, Mexico, and has since then been rather rare in collections. Of two plants in the garden of the late Sir T. Hanbury at La Mortola, Ventimiglia, under this name, in 1901, one poled in autumn 1904. The scape was damaged by frost during the following winter, and it produced from the stump a large number of bulbils, by JULY, 1912.

means of which it has been propagated and distributed. Other plants identical with these have been received since at La Mortola from the Botanic Gardens in Palermo and Paris under the name of *A. asperrima*. One of the plants derived from the original specimen flowered at La Mortola in June, 1911, and provided the material on which our figure is based. Our plant agrees well with the description of *A. marmorata* given by Baker in his Handbook of the Amaryllideae, p. 179; his remark, "between *A. Scolymus* and *A. americana*," well expresses its characters. The leaves are glaucous, almost white, and only become greener in dying off on the flowering plant. They are extremely rough, especially on the underside and near the point; the marginal and end spines are also tubercular and rough. The Indians are said to make use of the leaves in veterinary medicine.

The position of *A. marmorata* is not altogether clear. From the leaves it might be considered a member of the *Americanae* of Baker, but the small bright yellow flowers preclude this and suggest a closer affinity to the species allied to *A. Willdingii*, Tod., though here again *A. marmorata* differs as regards the arrangement of its flowers on the branches.

DESCRIPTION.—*Shrub*; stem 0; rosette simple, without suckers or offshoots, 2 yards in diameter and 1 yard high, with about thirty leaves. *Leaves* spreading from the base, recurved from the middle and with a slightly inflexed tip, lanceolate or oblanceolate-spathulate, 40–44 in. long, above the middle 10–11 in. broad, hence gradually narrowed to a channelled point ending in a conical, greyish brown, very rough spine, $\frac{3}{4}$ in. long, not decurrent; constricted towards the base and about $5\frac{1}{2}$ in. broad at the neck, about 3 in. thick at the base, convex on both sides, but very markedly and almost broadly keeled on the underside, gradually thinner above, broadly channelled and with the margins erect and somewhat undulate, much repand between the large irregular spines, very glaucous or almost white or with a bluish tint, becoming paler and greener only before decaying, very rough everywhere, especially on the underside and near the top; marginal spines from a broad horny base, cuspidate-uncinate, brown, rough, rising from a broad

ovate or deltoid fleshy cushion of the leaf margin, $\frac{3}{4}$ –2 in. distant and 7–8 lin. long, separated by a roundish or acute sinus; the lower and higher marginal spines gradually smaller and the edge not repand between them. *Inflorescence* about 12 ft. high; scape relatively slender, about 6 ft. long, green, smooth, with several deltoid acuminate scarious empty bracts, $2\frac{1}{2}$ –6 in. long, and a few leaf-like bracts at its base; panicle oblong-cylindric, about 6 ft. long and 22 in. broad, with about twenty-six spreading branches, the longest 10 in. long; flowers in dense clusters, bright yellow, with a somewhat unpleasant smell, rather small, $1\frac{1}{2}$ in. (including the style $2\frac{1}{2}$ in.) long. *Pedicels* short, bracts minute, soon drying. *Perianth-segments* united at their base into a short tube, erect, campanulate, fleshy, bright yellow, soon withering at the top; the outer ones ovate-lanceolate, acute, 8–9 lin. long and 3 lin. broad, convex on the back and broadly channelled inside, the interior shorter, more obtuse and broader, with a fleshy keel at the back and a deep furrow inside. *Stamens* yellow, filaments inserted at the base of the tube, erect, unequal, 15–17 lin. long; anthers yellow, 8 lin. long. *Ovary* bright and glossy green, subtrigonous or subcylindric, tapering at both ends and below the tube shortly 6-furrowed, 10–11 lin. long and $2\frac{1}{2}$ –3 lin. broad; style ultimately over $1\frac{1}{4}$ in. long, yellow, somewhat thickened at the obscurely 3-lobed stigma.

Fig. 1, spine from leaf-margin; 2, anther; 3, stigma; 4, sketch of entire plant, from photographs:—all enlarged except 4, which is much reduced.

TAB. 8429.

AGAVE PROTUBERANS.

Mexico.

AMARYLLIDACEAE. Tribe AGAVEAE

AGAVE, Linn.; Benth. et Hook.f. Gen. Plant. vol. iii. p. 738.

Agave protuberans, Engelm. ex Baker, Handb. Amaryll. p. 197; species ex affinitate *A. virginica*, Linn., a qua floribus congestis tuboque perianthii multo brevior differt.

Herba, acaulescens. Tuber globosum, 5 cm. diametro, perenne. *Folia* radicalia, rosulata, subcarnosa, fragilia, lineari-lanceolata, 15–20 cm. longa, 3–4 cm. lata, supra canaliculata vel fere conduplicata, viridia, brunneo-purpureo-maculata, marginibus planis vel undulatis, angustissime albo-cartilagineis, minutissime denticulatis instructa. *Scapa* erecta, 60 cm. alta, 6 mm. diametro, rigida, subglauca. *Bracteae* lanceolatae, acuminatae, 4.5 cm. longae, sursum gradatim minores, crassae. *Spica* 10 cm. longa, densiflora; flores in papillas rhachidis tumidas singulatim insidentes; bracteolae 2, altera abaxialis, e basi deltoidea 6 mm. lata acuminata, 12 mm. longa, purpurascens, albo-marginata, altera lateralis, 4 mm. longa, 1.5 mm. lata, membranacea, albescens. *Perianthii* tubus 3 mm. longus; segmenta 1.5 cm. longa, 5 mm. lata, oblonga, obtusa, apice leviter cucullata, viridescens, minute purpureo-maculata. *Filamenta* longe exserta, 4 cm. longa, subulata, alba, purpureo-maculata; antherae oblongae, 13 mm. longae, brunneo-purpureae. *Ovarium* 10 mm. longum, 6 mm. latum, 6-costatum, obliquum; stylus cylindricus, staminibus aequilongus; stigma incrassatum, trilobum.—*A. guttata*, Hemsl. Biol. Amer.-Centr. vol. iii. p. 348, tab. 87, non Jacobi et Bouché. *Leichtlinia protuberans*, Herm. Ross in Icon. Plant Hort. Panorm. p. 8, tab. 3 (1896); Engl. & Prantl, Natürl. Pflanzenf. Nachtr. ii. p. 11, and iii. p. 49.—C. H. WRIGHT.

The subject of our illustration is one of those *Agaveae* which differ both from the true Agaves and from the *Lit-taeas* in having the flowers solitary on simple racemes or spikes and in having herbaceous leaves without a terminal pungent spine. Considerable diversity of opinion has existed with regard to the status of the group which about a century ago appeared to Salisbury entitled to generic recognition, though the name *Manfreda*, proposed by him for *Agave virginica*, Linn., figured at t. 1157 of this work, was not published until 1866. Thirty years later H. Ross treated the group as a distinct genus *Leichtlinia*, a name bestowed upon the species now figured because of its introduction by the late Mr. Max Leichtlin. But the structure of the flowers in all species of *Manfreda*, which

APRIL, 1912.



MS. del. J. N. Fitch lith.

Vines & Brothers Day & Son Lith.

L. Rowe & Co. London

name takes precedence of *Leichtlinia*, agrees so well with that of the Agaves and the Littaeas that it seems desirable to consider the group a subgenus of *Agave*. All the Manfredas are Mexican with the exception of *A. virginica* which is confined to the Southern United States. One of the best known is *A. maculata*, Regel, figured at t. 5122 of this work as “*A. maculosa*.” The Kew plant of *A. protuberans* was received from Mr. Leichtlin in 1882 shortly after its introduction from Mexico, where it inhabits the mountains near San Luis Potosi at altitudes of 6,000–8,000 feet above sea level. The species flowered in 1908 with Mr. R. H. Beamish at Glounthaune near Cork, and in June, 1910, at Colesborne, with Mr. H. J. Elwes, to whom we are indebted for the material for our figure. Like the other Manfredas, *A. protuberans* requires greenhouse conditions.

DESCRIPTION.—*Herb*; stemless; tuber globose, 2 in. wide, perennial. *Leaves* radical, rosulate, somewhat fleshy, fragile, linear-lanceolate, 6–8 in. long, $1\frac{1}{4}$ – $1\frac{3}{4}$ in. wide, above channelled or almost conduplicate, green blotched with brownish purple, margins even or waved, narrowly white-cartilaginous and very finely denticulate. *Scape* erect, 2 ft. high, $\frac{1}{4}$ in. thick, rigid and slightly glaucous; bracts lanceolate, acuminate, the largest $1\frac{1}{2}$ in. long or longer, gradually diminishing upward, thick. *Spike* 4 in. long, dense-flowered; flowers solitary on the swollen nodes of the rachis; bracteoles 2, an abaxial with a deltoid base $\frac{1}{4}$ in. wide, acuminate at the tip, reaching $\frac{1}{2}$ in. in length, purplish with white margins, and a lateral which is much smaller, membranous and whitish. *Perianth* with a short tube, only $\frac{1}{8}$ in. long, and with oblong, obtuse segments slightly hooded at the tip, greenish and finely blotched with purple, $\frac{1}{3}$ in. long, $\frac{1}{5}$ in. wide. *Filaments* far exerted, $1\frac{3}{4}$ in. long, subulate, white blotched with purple; anthers oblong, $\frac{1}{2}$ in. long, brownish purple. *Ovary* $\frac{1}{3}$ in. long, $\frac{1}{4}$ in. wide, 6-ribbed, oblique; style cylindric, as long as the stamens; stigma thickened, 3-lobed.

Fig. 1, portion of perianth, showing staminal insertion and stamens; 2, pistil, showing ovary in vertical section; 3, transverse section of ovary; 4, ovule; 5, sketch of an entire plant:—all enlarged except 5, which is much reduced.

TAB. 6292.

AGAVE (LITÆA) SARTORII.

Native of Mexico and Guatemala.

Nat. Ord. AMARYLLIDACEÆ.—Tribe AGAVEÆ.

Genus AGAVE, Linn. (*Jacobi in Hamburg Gartenzeit.*, 1864, *et anni seq.*).

AGAVE (*Littæa*) *Sartorii*; breviter caulescens, caudice interdum furcato, foliis circiter 30 laxe rosulatis lanceolatis bipedalibus carnosu-coriaceis viridibus sæpissime albido-vittatis, e medio ad apicem angustatis, mucrone terminali haud pungente, aculeis marginalibus minutis crebris patentibus deltoideis inæqualibus castaneis, scapo foliis 2–3-plo longiore foliis reductis pluribus linearibus erectis prædito, panícula cylindrica subspicata tripedali cernua, pedunculis et pedicellis subobsoletis, bracteis parvis linearibus basi deltoideis, perianthio viridi luteo tincto, ovario oblongo, tubo late infundibulari ovario equilongo fauce dilatato segmentis oblongis erecto-falcatis, genitalibus longe exsertis.

A. *Sartorii*, K. Koch in *Wochensch.* 1860, p. 37; *Jacobi, Monog. Agave*, p. 128.

A. *aloina*, K. Koch, *loc. cit.* p. 37.

A. *Noackii*, *Jacobi, Monog. Agave*, p. 125.

A. *pendula*, *Schnittspahn; Jacobi, Monog. Agave*, p. 130.

A. *cæspitosa*, *Todaro Hort. Bot. Panorm*, p. 32, t. 8.

FOURCROYA *Noackii*, *Hort.*

This is a very well-marked species of *Agave*, easily recognisable in the large group of the carnosu-coriaceæ by its caulescent habit, which is very rare in the genus as a whole, and confined to this single species in the group in question. It was first introduced to the Berlin botanic garden by Dr. Rohrbach about 1850, and has since been received from the district of Orizaba, in Mexico. Our first notice of its flowering is by Dr. Schnittspahn in 1857 in the *Zeitschrift des Gartenbauvereines zu Darmstadt*. It is fully described, so far as leaves go, under three different names in the monograph of *Jacobi*, and has lately been figured under a fourth by *Todaro* from a specimen that flowered at the botanic garden at Palermo. The present plate is after a drawing of a specimen that flowered with Mr. Wilson Saunders, at Reigate, in March, 1870, and it has flowered at least twice

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at Kew within the last few years; the last time this present spring.

DESCR. *Caudex* reaching in the specimen drawn a length of a foot, forked dichotomously, and bearing two tufts of leaves. *Leaves* about thirty in a lax rosette, lanceolate, two feet long, three inches broad at the middle, narrowing gradually to a non-pungent point, and to a breadth of two inches above the dilated base, somewhat fleshy in texture, one-eighth to a quarter inch thick in the centre, an inch thick at the base, bright green, with often a broad pale band down the centre, the margin furnished with copious close, unequal, deltoid, spreading, chestnut-brown spines. *Scape* twice or three times as long as the leaves, furnished with numerous erect linear reduced bract-like leaves. *Panicle* cernuous, subspicate, cylindrical, three feet long; peduncle and pedicels nearly obsolete; bracts linear, from a dilated base, much shorter than the flowers. *Perianth* green, with a yellow tinge in the upper part; ovary oblong, half-inch long; tube broadly funnel-shaped, as long as the ovary, dilated at the throat; segments oblong, obtuse, half-inch long, erect-falcate when fully expanded. *Filaments* inserted in the perianth-tube, subulate, reaching a length of eighteen to twenty-one lines; anthers ligulate, versatile, three-eighths of an inch long. *Style* reaching as high as the top of the stamens; stigma capitate. *Capsule* oblong-trigonus, one and a quarter to one and a half inches long.—*J. G. Baker.*

Fig. 1, The whole plant, *much reduced in size*; 2, a leaf *less reduced*; 3, summit of a leaf; 4, portion of the panicle, with several pairs of flowers; 5, capsule, *the three last natural size*.

AGAVE SAUNDERSII.

Mr. Saunders's Agave.

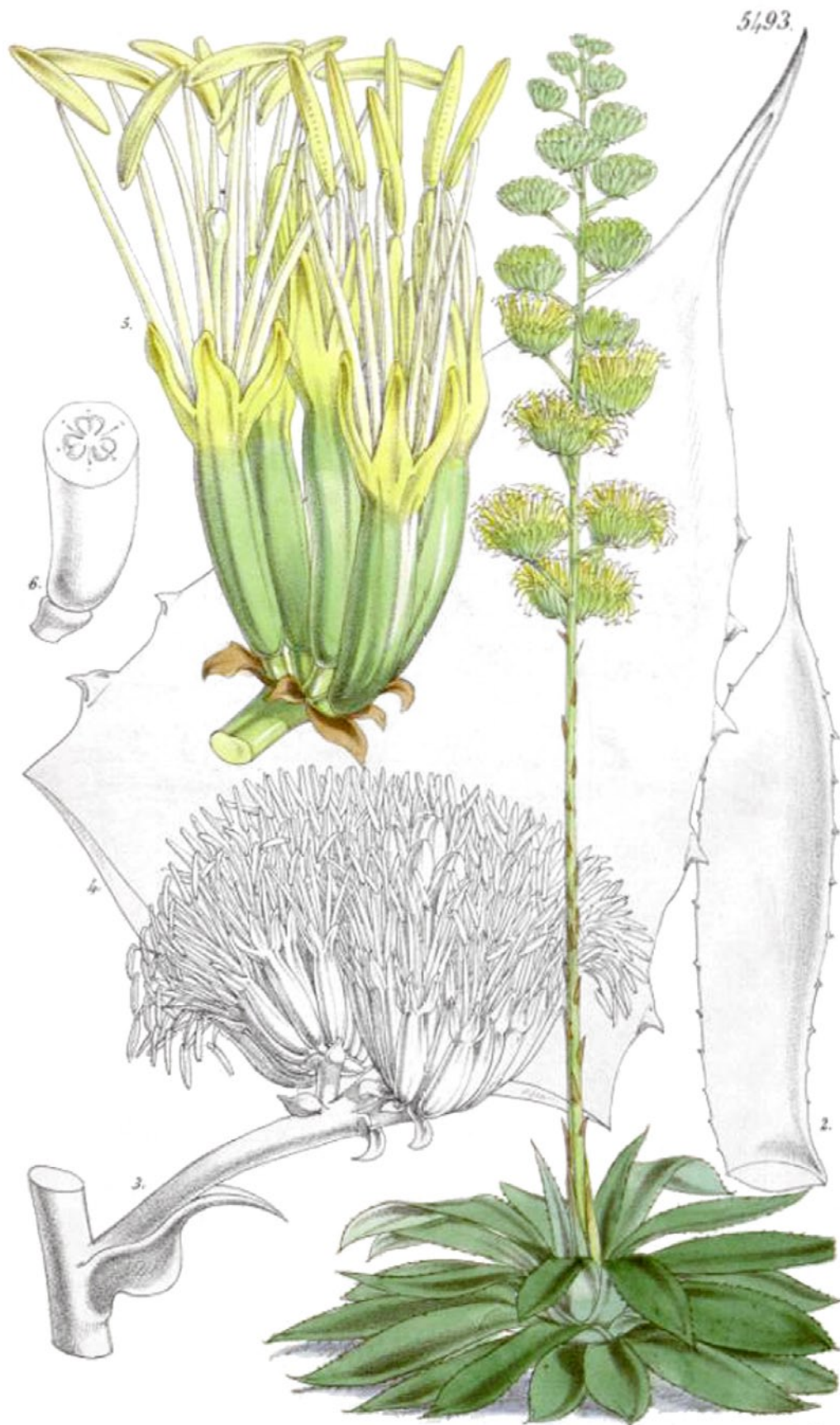
Nat. Ord. AMAIRYLLIDÆ.—HEXANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 5333.)

AGAVE *Saundersii*; acaulis, foliis horizontaliter patentibus glaucis bipedalibus 4 uncias latis lanceolato-oblongis basi angustiore spinoso-acuminatissimis, margine spinosis, spinis triangulari-acutissimis subdistantibus atro-purpureis, scapo 14-pedali copiose bracteato, pedunculis 4-pollicaribus teretibus horizontalibus distantibus, basi unibracteatis, bractea ovata longe subulata basi inferne lato-carinata, fasciculis globosis submultifloris, floribus compactis subsessilibus basi bracteolatis, ovariis subcylindræis obscure sulcatis viridibus sesquipollicaribus, limbi flavi laciniis suberectis oblongo-lanceolatis acutis, staminibus perianthii longitudine æqualibus, antherisque pallide flavis, stylo $\frac{1}{2}$ longitudine filamentorum, stigmate globoso, capsula (immatura) elliptica.

Perhaps no plants require more illustration by figures than the species of a genus of which we here represent one, which we venture to consider as new. It promises to be a genus numerous in individuals, and these of a most interesting character, and of which the well-known American Aloe (*Agave Americana*) is the type. Travelling botanists in vain attempt to preserve specimens for the herbarium,—they cannot therefore be studied *there*;—and in our gardens, except in some great public establishments, few are disposed to sacrifice the space necessary for their cultivation, and they are proverbially shy of flowering, so much so, that the *Agave Americana* is generally and to this day spoken of as the plant which “flowers once in a hundred years. It is true that of late, in a German work,* a “monographische Skizze” is given of no less than sixty-four species, apparently of those in cultivation, with brief specific characters,—a large proportion of them derived from the foliage alone, so that they

* ‘Wochenschrift des Vereines zur Beförderung des Gartenbaues in den Königlich-Preussischen Staaten, für Gärtnerei und Pflanzenkunde.’



can be of very little service in scientific botany. At any rate, we fail to discover our present *Agave* among them. It is from the rich collection of succulents in the possession of our friend William Wilson Saunders, Esq., of Heathfield, Reigate. Its origin is not known, and we can only say it is probably a native of Mexico, a region so rich in species of this genus. It has flowered in the winter season, and now, January, 1865, the fruit seems fully formed, but at present quite green.

DESCR. Stemless. *Leaves* singularly spreading, nearly horizontally, the lowest ones lying close to the ground, one and a half to two feet long, moderately thick, glaucous, oblong-lanceolate, suddenly terminating in long purple-brown *spines*, nearly plane or with the spinous margins a little upturned; the *spines* distant, from a broad base triangular, dark purple-brown. *Scape*, in our plant, fourteen feet long, stout in proportion, cylindrical, beset at very short intervals with erect, appressed, subulate scales, which soon become marcescent. *Clusters* or *fascicles* of flowers numerous, subglobose, densely crowded, terminating in a horizontal *peduncle*, four inches long, its base subtended by a large, ovate, acuminate *bract* deeply carinated below. *Secondary fascicles* subsessile and bracteolated at the base. *Ovary* one and a half inch long, green, subterete, but obscurely grooved or six-angled, crowned by the yellow *limb* of four, nearly erect, acuminate *segments*. *Stamens* six, yellow; *filaments* equal in length with the perianth, and inserted between the segments. *Anthers* very large, deep-yellow, versatile. *Style* half the length of the filaments, terminated by a clavate *stigma*. *Capsule* (at present immature) nearly elliptical, crowned by the withered limb of the perianth.

Fig. 1. Greatly reduced figure of the entire plant. 2. Much reduced figure of a leaf. 3. Reduced figure of a fascicle of flowers, with its peduncle and carinated bract at the base. 4. Apex of a leaf:—*natural size*. 5. Secondary cluster of flowers,—*natural size*. 6. Transverse section of an ovary,—*slightly magnified*.

AGAVE SCHIDIGERA.

Splintered-Leaved American Aloe.

Nat. Ord. AMARYLLIDÆ.—HEXANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 5333.)

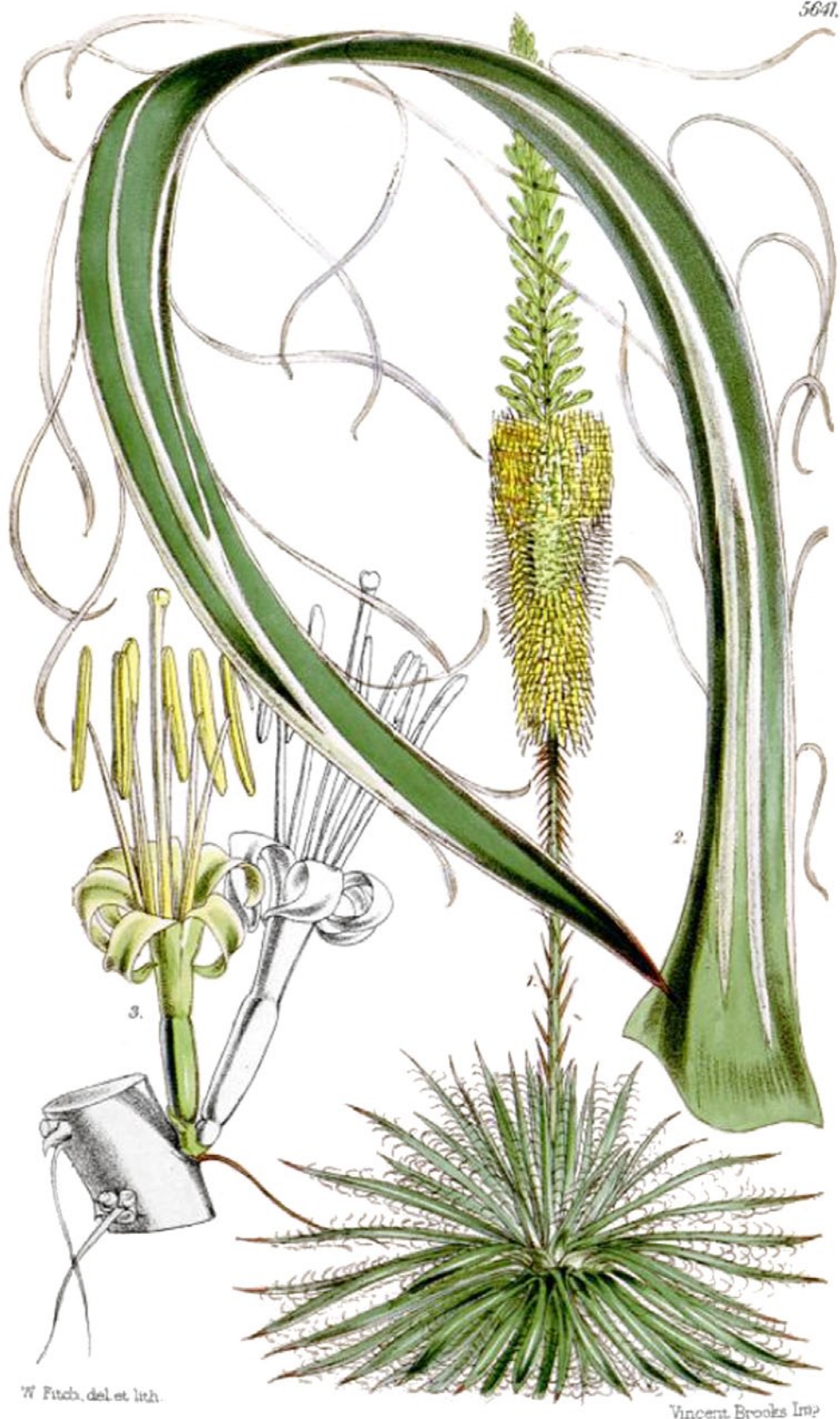
AGAVE *schidigera*; acaulis, foliis horizontaliter patentibus pedalis anguste ensiformibus spinuloso-acuminatis supra basin dilatata paulo angustatis viridibus albo-lineatis marginibus late albo-lanatis in filis planis elongatis retortis desinentibus, scapo stricto gracili 6-pedali bracteis elongatis strictiusculis acicularibus dense obsito, spica elongata stricta sublaxiflora, floribus viridibus 2–3-nis, fasciculis subsessilibus bractea filiformi subtensis, ovario cylindrico pollicari glaberrimo, perianthii tubo subinfundibuliformi ovario æquilongis, lobis lineari-oblongis revolutis acutis tubo æquilongis, filamentis subulatis perianthio æquilongis strictis, antheris lineari-elongatis.

AGAVE *sebidigera*. Lemaire in *Verschaffelt Cat.* 1861; *Compte Rendu Soc. Roy. d'Agric. et Bot. Gand*, 1861; *Illust. Hort.* v. 8. sub t. 287, et v. 9. t. 330.

AGAVE *filifera*, var. *pannosa* et var. *adornata*. Scheidw. in *Compte Rendu Soc. Roy. Agric. et Bot.*, et in *C. Koch, Wochenschr.* n. 36. 1861.

The remarkable plant here figured was introduced into Europe in 1861, from Mexico, by Mr. Verschaffelt, of Ghent, and its foliage was figured in the 'Illustration Horticole' of the following year, where it is also described by M. Lemaire, on whose authority our synonyms and quotations rest. Our specimen flowered in January in Mr. Williams's establishment, Paradise Nursery, Holloway, where the drawing was executed by Mr. Fitch. As a species, M. Lemaire states that it is so very closely allied to *A. filifera*, that he was at first disposed to regard it as a variety of that plant, but that it differs in the more linear (less oblong) leaves, more dilated at the base, their less pungent tips, and the very much thicker, broader, woolly, torn edges of the leaf,

MAY 1ST, 1867.



while, according to the figure of the *A. flifera* in the 'Revue Horticole,' the corolla-lobes of that plant are shorter.

DESCR. *Stem* none. *Leaves* forming a low subhemispherical mass; lower spreading and recurved; upper suberect, about one foot long, narrow linear-ensiform, with red sub-pungent apices, dilated at the base and slightly contracted above it; with irregular longitudinal broad white bands on both surfaces, and white edges, from which are given off woolly recurved flattened broad filaments, one to three inches long. *Scape* strict, erect, about six feet high, lower third covered with numerous erect or recurved subulate red-brown bracts, two inches long and upwards. *Spike* rather slender, very many-flowered, cylindric. *Flowers*, including the stamens, three and a half inches long, green, with yellow anthers, rather dense, in fascicles of two or three, each fascicle subtended by a filiform red flexuous bract. *Pedicels* very short, with very small broad bracteoles. *Ovary* cylindric, glabrous. *Perianth* tube as long and broad as the ovary, lobes as long as the tube, linear, acute, revolute. *Filaments* strict, subulate, one inch long; *anthers* nearly as long, linear-elongate. *Stigma* obtusely three-lobed.—*J. D. H.*

Fig. 1. Reduced figure of entire plant. 2. Leaf, *nat. size*. 3. Flowers, *nat. size*.



Vernum, Presch. & Long & Sordani

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M. B. Schott, J. T. Peacock

TAB. 7567.
AGAVE SCHOTTII.
Native of Arizona.

Nat. Ord. AMARYLLIDÆ.—Tribe AGAVÆ.

Genus AGAVE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 738.)

AGAVE (Littæa) *Schottii*; acaulis, foliis dense rosulatis e basi ovata linearibus rigidis apice pungentibus facie canaliculatis dorso carinatis margine filiferis, scapo elongato gracili, floribus in paniculam laxam subsecundam dispositis, bracteis parvis ovatis cuspidatis, pedunculis pedicellisque brevibus clavatis, perianthio citrino tubo elongato infundibulari, lobis oblongis tubo brevioribus, staminibus vix exsertis supra medium tubi insertis, antheris magnis linearibus, fructu duro parvo oblongo.

A. Schottii, Engelm. *Notes on Agave*, p. 17. *Collected Works*, p. 315. *Baker Handb. Amaryllid.* p. 307. *Miss Mulford in Report Missouri Gard.* vol. vii. (1896) p. 72, t. 29.

A. geminiflora var. ? *Sonoræ*, Torrey in *Bot. Mex. Bound.* p. 214.

This very distinct *Agave* resembles *A. filifera* and *A. schidigera* in having leaves the edges of which break away into fibres, but differs from them widely in its lax subsecund inflorescence, bright yellow flowers and short stamens. It is very abundant on the mountains of Southern Arizona, at an elevation of about five thousand feet above sea-level. Professor Toumey reports that it so thickly covers large areas, miles in extent, on the southern slopes of the mountains of Santa Catalina that it is almost impossible to travel through it. It is called *Amole* in its native country, and the rootstock is sold as affording a substitute for soap. It was first collected by the late Dr. Arthur Schott in 1855. The Kew plant was purchased at the sale of the collection of Mr. J. T. Peacock in 1889, but did not flower till March, 1897. There is a dwarf variety with serrulate leaves which extends further south than the type.

Descr.—*Rootstock* two inches in diameter, thickly clothed with the fibrous relics of old leaves. *Leaves* forming a dense sessile rosette, linear from an ovate base, a foot long, pungent at the apex, channelled down the face,

DECEMBER 1ST, 1897.

acutely keeled on the back, with edges breaking up into fine fibres. *Scape* slender, four or five feet long. *Inflorescence* a lax, subspicate, subsecund panicle a foot long; bracts ovate, cuspidate, very small; peduncles and pedicels very short and stout. *Perianth* bright yellow, two inches long; tube funnel-shaped, longer than the oblong lobes. *Stamens* scarcely exerted beyond the perianth-lobes, inserted above the middle of the tube. *Capsule* oblong, coriaceous, half an inch long.—*J. G. Baker*.

1, Portion of raceme and flower with perianth laid open; 2, anther; 3, top of style and stigma:—*all enlarged*; 4, whole plant greatly reduced.

AGAVE STRIATA.

Striated-leaved Agave.

Nat. Ord. AMARYLLIDÆ.—HEXANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 4934.)

AGAVE *striata*; acaulis, foliis patentibus rectiusculis numerosissimis rigido-carnosis elongatis linearibus sensim attenuatis (transverse sectis subrhombeo-ancipitibus) subglaucis superne longitudinaliter pluristriatis margine scabris apice spinescente, scapo centrali elongato foliis duplo triplove longiore bracteato bracteis patentibus, spica longissima densiflora, floribus geminatis sessilibus, bracteis e lata basi longe subulatis, capsulis subbaccatis brevi-ovatis obtuse triquetris nigris.

AGAVE *striata*. Zucc. in Nov. Act. Acad. Leopold. Carol. 16. 2. p. 678. Salm-Dyck, Hort. 1814. p. 307. "Roem. Am. 286."

There can be no question that this plant, which we have received from Real del Monte, Mexico, is nearly allied to *Agave geminiflora*, Gawl. (see Bot. Reg. t. 1145), but the foliage is different in the form (as best seen by a transverse section), and the two are quite distinct. Three species of this group of *Agave*, with very narrow linear but gradually attenuated leaves, are described by authors; viz. *Agave geminiflora*, Gawl. (too long known in our gardens under the false name of *Bonaparteia juncea*); *A. striata*, Zucc., which we believe to be the species here figured; and *A. recurva*, Zucc. The two last appear to be hitherto unknown in the flowering state. Of the first, *A. geminiflora*, I would observe that this is described as having the leaves filamentous at their margins, although no figure, that we have seen, gives that appearance (I have no access to "Tagliabue, in Bibliotheca Ital. i. t. 100"). Dr. Lindley describes them "marginibus per stam filamentosis." The oldest plant however, under the name of *A. geminiflora*, in our gardens, shows no appearance whatever of filaments: but, on the other hand, we have lately received a

NOVEMBER 1ST, 1856.

young plant under the name of "*A. geminiflora*, filamentosa," quite remarkable for its copious filaments: so that it is probable the plant of English gardens, at least, is not the true *geminiflora*, or else the plant varies remarkably in the absence or presence of these filaments. From the two species to which I have now alluded, our plant may be recognized by the foliage alone: in them the leaves are, comparatively, soft and flaccid; there are no striæ, there is no scabrous margin, and the surface is dark green, minutely dotted with a pale, closely adherent scurf, only visible under a lens. Our *A. striata* has flowered during the present year, for the first time.

DESCR. Stemless or nearly so. *Leaves* very numerous, from a short *trunk* or *caudex*, which is entirely clothed by them, two to two and a half feet long, from a broad base, linear, very rigid, tapering gradually to the apex, which is terminated by a horny brown point, extremely pungent. In substance the leaf is thick; a transverse section gives a compressed rhomboid figure, within spongy, but full of fibre; externally the surface is glaucous-green, marked with rather closely placed, parallel lines; the margin is rough, with a very narrow cartilaginous edge, which is minutely serrated. The younger and central leaves are erect, the lowest ones recurved, the intermediate ones horizontally patent, but with a slight recurvation. *Scape* arising from the centre of the foliage, rather stout, four to six feet long, terminated by a long spike, of densely compacted *flowers*, imbricated in the bud and elongating as the flowers expand, so that the apex attains a height of ten to twelve feet from the ground. The scape, below the spike, has numerous, spreading, long, filiform or subulate scales, two to three inches long; these are flowerless *bracts*: the same, but smaller and green, subtend the flowers. These latter are in pairs, sessile; green externally, yellowish-green within. *Perianth* infundibuliform. The six segments ovate, moderately spreading. *Filaments* of the *stamen* stout, almost thrice as long as the corolla. *Anthers* large, linear, dark purple. *Ovary*, combined with the perianth, obscurely three-angled. *Style* thick, as long as the filaments. *Stigma* obscurely three-lobed, downy. *Capsule* subbaccate, short ovate, black, terminated by the withered perianth, obtusely trigonous, three-celled: *cells* with many very glossy black seeds.

Fig. 1. Entire plant, on a very reduced scale. 2. Apex of a leaf:—*nat. size*. 3. Transverse section of a leaf:—*magnified*. 4. Portion of a rachis of the spike with flowers:—*nat. size*. 5. Section of the ovary:—*magnified*.

TAB. 6655.

AGAVE UNIVITTATA.

Native of Mexico.

Nat. Ord. AMARYLLIDACEÆ.—Suborder AGAVEÆ.

Genus AGAVE, Linn.; (*Kunth Enum.* vol. v. p. 818.)

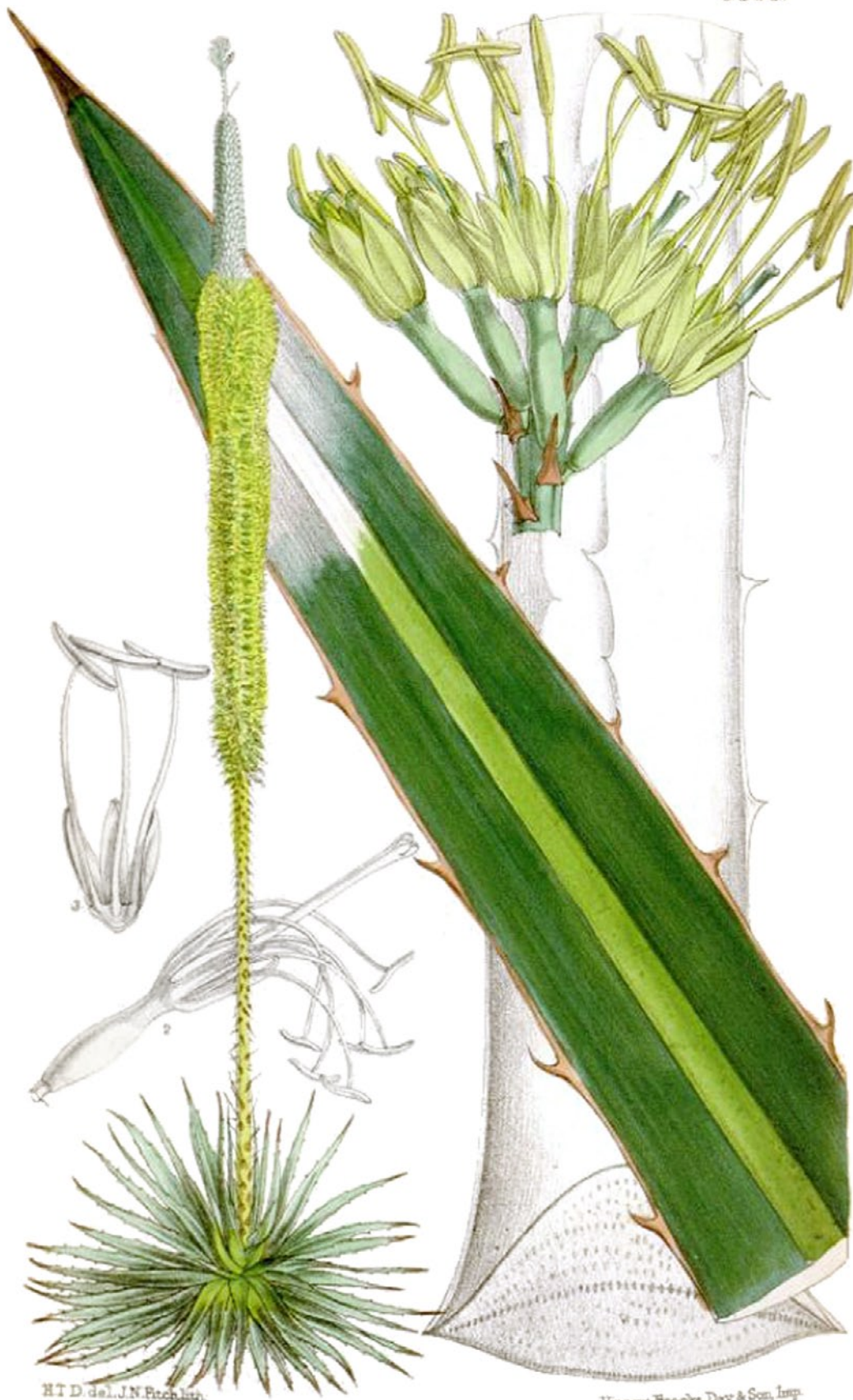
AGAVE (Littæa) *univittata*; acaulis, foliis 50 vel ultra dense rosulatis ensiformibus rigidis $1\frac{1}{2}$ –2 pedalis sordide viridibus lineâ mediana pallida vittatis apice spinâ pungente armatis marginibus continuis corneis angustis aculeis marginalibus distantibus parvis falcatis, pedunculo gracili 3–4-pedali, bracteis vacuis linearibus squarrosis, floribus in spicam elongatam cylindricam dispositis, bracteis parvis lanceolatis, pedicellis brevissimis, bracteolis minutis lanceolatis, floribus viridibus, ovario cylindrico pollicari collo constricto, perianthii tubo subnullo, segmentis oblongo-lanceolatis ovario brevioribus, staminibus segmentis 2–3-plo superautibus.

A. univittata, *Haworth in Phil. Mag.* vol. x. p. 414; *Salm-dyck Hort. Dyck.* p. 308; *Bonpland.* vol. vii. p. 92; *Kunth Enum.* vol. v. p. 835; *C. Koch in Wochenschrift*, 1860, p. 47; *Baker in Saund. Ref. Bot.* tab. 215; in *Gard. Chron.* 1877, p. 369, fig. 58.

This is one of the best-known and most distinct of the marginate Agaves. It is remarkable for its very stiff numerous narrow pungent ensiform leaves, which have a narrow horny border, with distant prickles, and invariably are marked down the centre with a narrow pale band, such as occurs casually in some other species. It has been in cultivation in this country for fifty years at least, but the flowering was not recorded till it was figured in 1870 in the *Refugium*. During the last few years I have seen it in flower, not only in our own collection, but also in those of Messrs. Peacock and Wilson Saunders. Our drawing was made from a plant that flowered at Kew in the spring of 1880.

Descr. *Leaves* fifty or more in a dense sessile rosette, ensiform, very rigid in texture, one and a half or two feet long, one and a half or two inches broad at the middle, not narrowed at all downwards, narrowed gradually upwards to the pungent brown point, quite flat on the face in the

NOVEMBER 1ST, 1882.



H.T.D. del. J.N. Pritch. lith.

Vincenz. Brooks Day & Son, Imp.

I. Reeve & Co. London.

lower half, a quarter of an inch thick in the middle, dull dark glaucous green with a band of pale yellowish-green down the centre, furnished with a continuous narrow brown horny border, with small distant much-hooked prickles. *Peduncle* three or four feet long, furnished with copious linear barren bracts, the lower ones ascending, the upper squarrose. *Inflorescence* a cylindrical spike seven or eight feet long, four inches in diameter when the flowers are fully expanded; flowers arranged in sessile pairs subtended by a small lanceolate scarious bract; pedicels a line long, each furnished with a minute lanceolate bracteole. *Flowers* proterandrous, very pale glaucous green in bud. Ovary cylindrical, an inch long, constricted at the neck; tube scarcely any; segments oblong-lanceolate. *Stamens* inserted at the base of the perianth-segments; filaments above an inch long; anthers linear. *Style* not developed till after the anthers fade, finally an inch and a half long.—*J. G. Baker.*

Fig. 1, A small portion of the flower-spike; 2, complete flower in its final stage, with stigma developed and stamens faded; 3, half a flower, above the top of the ovary, as seen from within;—*all life size.*

AGAVE VIRGINICA. SPIKE-FLOWERED
AGAVE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.

Cor. (supera G.) tubulosa, infundibuliformis, limbo sexpartito. *Stam.* exserta, summæ corollæ infixæ. *Anth.* longæ verfatiles. *Capf.* utrinque attenuata, subtrigona, polysperma; feminibus planis gemino ordine dispositis. *Juss. Gen. Pl.* 51.

OBS. Caulis subnullus aut caudiciformis; folia radicalia canaliculata rigida, apice (saepè etiam margine) spinosa, juniora, obvoluta; panicula e caudice assurgens maxima, pyramidata. *Habitus* YUCCÆ flos diversus. *Id.* l. c.

Specific Character and Synonyms

AGAVE *virginica*; (rhizoma crassum fusiformi-cylindraceum descendens, præmorsum? nec in caudicem assurgens;) foliis radicalibus, plurimis, e deorsum convolutis compactis, in orbem ambiter et recumbenter divergentibus, lanceolatis, coriaceo-crassis, rigidis, margine cartilaginea tenuissime denticulata, culpidè spinæformi; scapo simplicissimo, foliolis vagis diffitis obfuso; bracteis sphacelatis germini subæqualibus; floribus subsessilibus, in spicam longam eductis, remotius sparsis, ex adpresso-erectis divergentibus; stylo lobulis tribus stigmatosis emarginatis hianter patentibus terminato. G.

AGAVE *virginica*. *Linn. Sp. Pl.* 2. 1. 461. *Hort. Kew.* 1. 472. *Walt. Flor. Carol.* 121. n. 149. *Jacq. Ic. Rar.* 2., t. 378. *Coll.* 2. 261. *Michaux Fl. Bor.-Amer.* 1. 187. *Willd. Sp. Pl.* 2. 193.

ALOE foliis lanceolatis spina cartilaginea terminatis floribus alternis sessilibus. *Gron. Virg. ed.* 1. 152. *ed.* 2. 53.

DESC. Root perennial; rootstock descending, fleshy, fusiform-cylindrical, about an inch in diameter, præmorsè ? throwing out numerous



numerous thickish fibres, not elongated into a *caudex* upwards; *leaves* numerous, radical, ambient, downwards convolutely packed, upwards divergently recumbent, lanceolate, coriaceously thickened, rigid, from four to eight inches long, about two broad, with a very narrow cartilaginous finely denticulate-ciliate border, terminating in a spinous point; *scape* central, quite simple, from four to five feet high, round, beset with several small spathelike distant straggling leaflets, erect strict; *inflorescence* terminal, spiked, subflexuose, many-flowered, subseffile, rather distant, sparse, upright; *pedicles* nearly obsolete; *bractes* scariose, spacelate, about even with the germen, convolute-acuminate; *corolla* from adpressed-upright far diverging, greenish, cupped-tubular, obtusely hexagonal, alternate angles broader; *limb* sixparted, upright, scarcely diverging, but little shorter than *tube*; *segments* oblong-tapered, convolute-concave, quickly spacelate; *filaments* adnate to the tube, overtopping the corolla by nearly a third, thick filiform, somewhat compressed, equal, fasciculate, slightly divergent upwards, green, dotted with small purple spots; *anthers* large, linear-oblong, incumbent, balancing; *germen* continuous to the corolla, inferior, oval-oblong, obtusely-trigonal; *style* upright, gradually lengthening, but always shorter than stamens, thicker, obtusely triquetral as if of three concrete filiform shafts; ending in three emarginate divaricately patent *stigmatose lobes*.

Native of Carolina and Virginia, growing in grassy spots. Introduced into Kew Gardens, by Mr. JOHN CREE, in 1765. The bloom is very sweet. Varies with spotted and plain leaves. Flowers in August and September. Requires to be kept in the greenhouse. The specimen was sent us by Mr. LODDIGES, of Hackney. *G.*

E R R A T A

No. 1053. l. 10. pro “media” lege “extima”

No. 1055. l. 21. for “we need add no further description to the many” read “we need not add any further description to those.”

No. 1149. l. 20. post “*Ed.*” infere “2.”

No. 1149. l. penult. pro “Clufiii” lege “Clufii”

TAB. 8501.

AGAVE WARELLIANA.

Mexico.

AMARYLLIDACEAE. Tribe AGAVEAE.

AGAVE, Linn.; *Benth. et Hook. f. Gen. Plant.* vol. iii. p. 738.

Agave (Littaea) Warelliana, Baker in *Gard. Chron.* 1877, vol. viii. p. 264, fig. 53; species e grege *Littaeorum* perianthiis tubulosis segmentisque recurvis, maxime affinis *A. chiapensi*, Jacobi et *A. macranthae*, Tod., sed a prima differt tubo longiore, a secunda foliorum forma et aculeis minoribus.

Suffrutex. *Rosula* acaulis vel subcaulescens, parce sobolifera et post anthesin ex axillis ramosa, dense foliata, circiter 1 m. alta et 1.70 m. lata. *Folia* laete et pallide viridia, vix glaucescentia, subnitida, erecto-patentia, lanceolato-spathulata, acuminata, 70–75 cm. longa, supra medium 13–14 cm. lata, basin versus ad 9–10 cm. constricta, usque medium convexa, superne plano-concava, dorso convexa, basi carnosa circiter 6–7 cm. crasa, superne tenuiora sed satis rigida; spina terminalis 18–20 mm. longa et 3–4 mm. lata, recta, atro-brunnea, supra plana et ultra medium late canaliculata, ad margines longe decurrens; margines linea atro-brunnea vel demum grisea usque basin fere muniti aculeisque parvis vix 1 mm. longis et 2 mm. inter se distantibus rectis incurvis vel recurvatis serrulati. *Inflorescentia* circiter 5 m. alta; scapus validus adscendens 2 m. longus, viridi-brunneo-maculatus, bracteis vacuis numerosis erectis adpressis deltoideis longe acuminatis mucronatis obtectus; bracteae inferiores circiter 28 cm. et ultra, superiores 18 cm. longae; spica densissima 3 m. longa et circiter 34–35 cm. lata, bracteae magnae, circiter 15–17 cm. longae iis scapi similes, summi gradatim minores. *Flores* breviter pedicellati, 90–95 mm. longi; ovarium 4 cm. longum, utrinque attenuatum, trigonum, laeve, laete viride, subrectum; perianthii tubus decurvatus, obconicus 14–15 mm. longus, extra 6-sulcatus; segmenta late lineari-lanceolata, obtusiuscula, 35 mm. longa, intus luteola, dorso violaceo-brunneo-adspersa, exteriora acutiora, interiora obtusiora latiora, 10–11 mm. lata, dorso late carinata; filamenta ad faucem inserta, 85 mm. longa, violaceo-brunnea, basi pallida, antherae sulphureae 32 mm. longae; stylus robustus concolor fere 14 cm. longus. *Capsula* obclavata, breviter rostrata, trigona, lignosa, 35–38 cm. longa et 18 mm. lata; semina atra, 6 mm. lata, subsemiorbiculata.—A. BERGER.

Agave Warelliana was first described by Mr. Baker from the famous collection of Mr. Wilson Saunders. It is still an uncommon, but is a very attractive plant in gardens. During the summer of 1912 it flowered at La Mortola in the garden of Lady Hanbury, and also in the garden of Professor G. Roster at Ottonella in the Island of Elba, From the plant which flowered at La Mortola was derived the material from which our figure has been prepared.

JUNE, 1918.



M. S. del. J. N. P. lith.

Vincent Brooks, Day & Son Ltd. imp.

L. Reeve & Co. London.

Among the Agaves generally included in the section *Lit-taea* on account of their cylindrical inflorescences, our species belongs to a special group the members of which have tubular flowers with recurved segments, as in *A. polyacantha*, C. Koch. Its nearest allies are *A. macrantha*, Tod. and *A. chiapensis*, Jacobi. All have rather large flowers and bracts. But in *A. chiapensis* the flowers are smaller than in *A. Warelliana* and have a shorter tube; the leaf characters also differ even more markedly. Between *A. macrantha*, Tod., and *A. Warelliana* there are relatively minor differences, especially in the shape of the leaves and their marginal teeth, so that it is not impossible that the two may be extreme forms of one rather variable species. If this view be adopted, Mr. Baker's name has priority. The *Agave* which flowered at Lyon in the Parc de la Tête-d'Or in 1869 and was described as *A. chiapensis* by Jacobi (Abhandl. Schles. Ges. Naturw. Abth. 1870, p. 164) is another form of this species and is not the same as the original *A. chiapensis* described by Jacobi in 1866 (Hamb. Gartenz. xxii. 213).

DESCRIPTION.—*Shrub*. *Rosette* acaulescent or very shortly caulescent, with about 75 leaves, over 3 ft. high and nearly 6 ft. broad, emitting a few suckers and, after flowering, branching from the axils. *Leaves* about 28–29 in. long and 5–5½ in. broad in the middle, lanceolate-spathulate, erecto-patent, bright pale green, almost shining, rather stiff and hard, at the base about 2½–3 in. thick, constricted to 4 in. or less, above convex or plano-convex, towards the middle and the long point a little concave, convex at the back, especially at the base; end spine ¾–4/5 in. long and ½–2 lin. broad, straight, black-brown, when old ash-grey, above flat and broadly channelled to about the middle, on the margins decurrent into a narrow horny line which almost reaches the base and which is densely beset with minute teeth; teeth about ½ lin. long and 1 lin. distant, straight or curved. *Inflorescence* over 15 ft. high. *Scape* robust, over 6 ft. high, green mottled with brown, densely covered with numerous empty bracts, all erect, deltoid and long acuminate, the lower ones about 11 in., the upper ones about 7 in. broad. *Spike* dense and many-flowered above, 9 ft. high, and when expanded about 13–14 in. broad;

bracts similar to those of the scape and rather large, about 6–7 in. long or longer, the upper ones gradually smaller; pedicels short and thick. *Flowers* about 3½–3¾ in. long, with a curved tube and limb. Perianth-lobes broadly linear-lanceolate, obtuse, yellowish-green, outside mottled with brown or red, the outer ones more acute, the inner ones broader, about 5–5½ lin. wide, with a deep channel above and a fleshy keel at the back; tube obconical, 7–7½ lin. long, outside with six distinct furrows; stamens over 3 in. long, widely spreading, robust, violet-brown, paler at the base; anthers about 1¼ in. long. *Ovary* 1½ in. long, somewhat triangular, smooth, green; style coloured like the stamens, at length 5½ in. long. *Capsule* 2½ in. long, obclavate, triquetrous; seeds black, about 3 lin. long and broad.

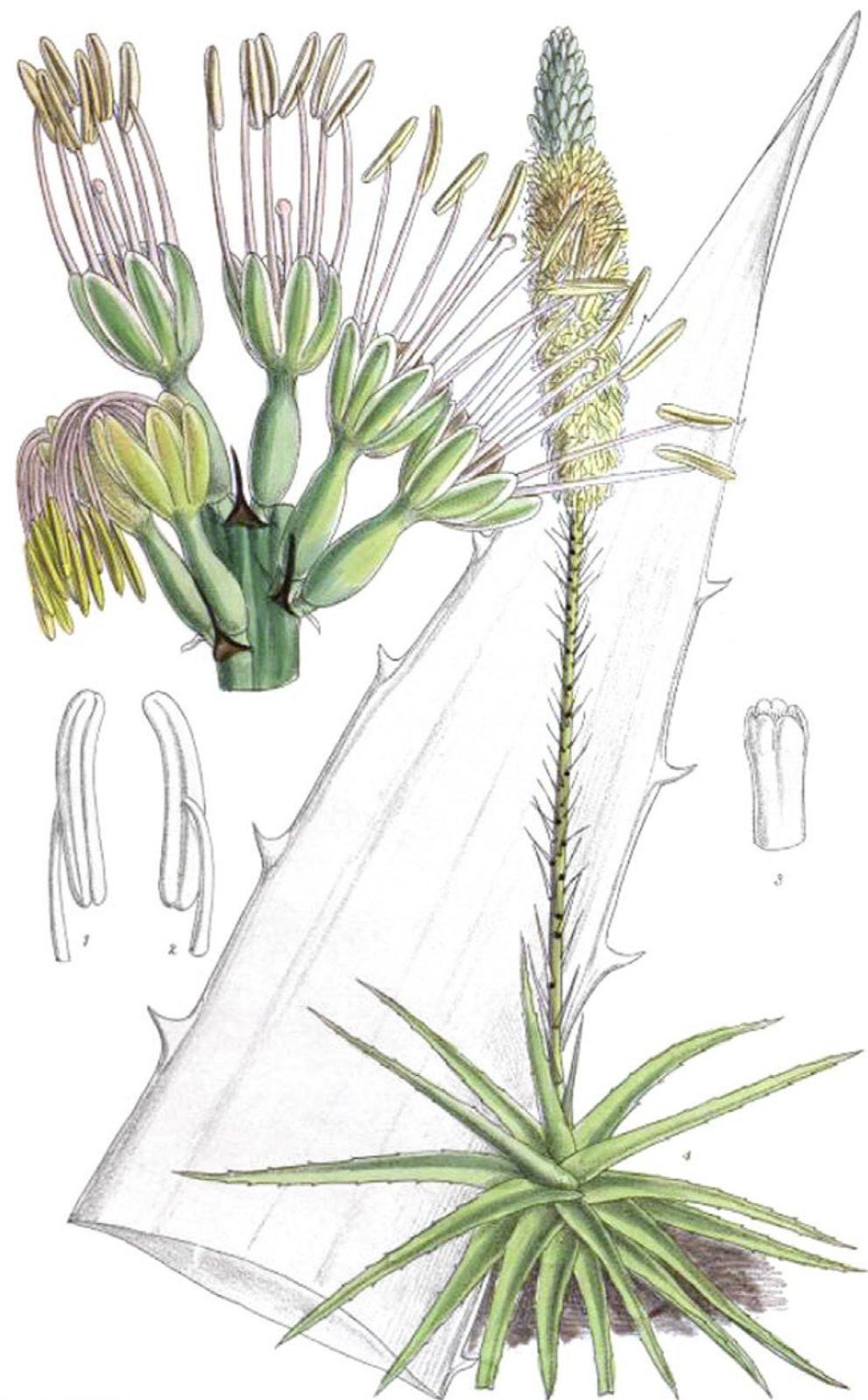
Fig. 1, portion of leaf-margin with teeth; 2, anther; 3, stigma; 4, sketch of an entire plant:—all enlarged except 4, which is much reduced.

TAB. 8214.

AGAVE WATSONI.

Central America?

AMARYLLIDACEAE. Tribe AGAVEAE.

AGAVE, Linn.; Benth. et Hook. f. *Gen. Plant.* vol. iii. p. 733.

MS. del. J.N. Fisch. lith.

Vincent Brooks Day & Son, Ltd. imp.

L. Reeve & Co. London.

Agave (§ *Littaea*) **Watsoni**, J. R. Drummond et C. H. Wright, in *Kew Bull.* 1907, p. 322; species *A. expatriatae*, J. N. Rose, maxime affinis, a qua inflorescentia brevior sed latior, foliorum pagina superiore vix concava et spinis marginalibus minoribus param uncinatis differt.

Caulis perbrevis. *Folia* 15–20 densius rosulata, laete viridia; exteriora sub anthesin patentia, anguste oblongo-lanceolata, circa 50 cm. longa, basi tumescente 8 mm. crassa ibique 9.5 cm. lata, cervice facie superiore convexa 5.5 cm. lata, inde facie superiore fere plana, versus apicem gradatim expansa medioque 7.5 cm. lata; interiora erecta, angustiora, in bracteis sensim abeuntia; omnia vitta marginali castanea tandem cinerascens ornata, marginibus aculeis circiter 5 mm. longis basi compressis vix uncinatis inter se 2 cm. remotis apiceque spina obtusiuscula 1.8 cm. longa armata. *Scapus* fere 2.5 m. altus, ad basin 3.5 cm., sub spicam floriferam 2 cm. crassus, cylindricus, bracteis imis exceptis patentibus subtiliter sulcatis albidis instructus. *Flores* viridescens, staminibus purpurascens, in spicam densiorem fere 10 cm. latam aggregati. *Bractee* inter alabastra inconspicuae, vix 1 cm. longae, supra basin abrupte constrictae, conduplicatae, in setas firmas subulatas scariosas abeunt. *Ovarium* inferum 13–14 mm. longum, 5 mm. latum, subtriquetrum. *Perianthii tubus* supra ovarium abrupte constrictus, manifeste 6-sulcatus; *lobi* ovario aequilongi, subcarnosi, viridescens, marginibus albedo-pellucidi. *Stylus* robustior, 3.5 cm. longus, albedo-pellucidus, purpurascens; stigma papillosum.

The *Agave* here figured flowered at Kew in the spring of 1907. As regards inflorescence it is nearest to *A. densiflora*, Hook. (B. M. t. 5006), which has also somewhat the same type of leaf, but with different, far more closely set margin-prickles; the apple-green leaf, with an almost convex neck, and flat upper surface of the blade, resembling that of *A. (Euagave) decipiens*, Baker, should serve to distinguish *A. Watsoni* from all known *Littaeae*, not excluding *A. expatriata*, Rose, which is only known to us from the author's photograph and description.

DESCRIPTION.—*Stem* very short. *Leaves* apple-green, 15–20 in a moderately dense rosette, the outer, at the time SEPTEMBER, 1908.

of flowering, spreading, narrowly oblong-lanceolate, about 20 in. long, dilated base over $\frac{1}{3}$ in. thick, and $3\frac{3}{4}$ in. broad, neck about $2\frac{1}{4}$ in. broad, convex on its upper surface, greatest width of leaf, at about 9 in. from the base, about 3 in., upper surface almost flat upwards, except just below the tip, which bears a rather blunt, finely grooved spine, less than $\frac{3}{4}$ in. long; margins with an extremely narrow ribbon, brown when young, ashen grey with age, armed at intervals of about $\frac{3}{4}$ in. with prickles under $\frac{1}{4}$ in. long, compressed at their bases, narrowly triangular in outline, tips not obviously hooked. *Flowering stem* not quite 9 ft. high, diameter $1\frac{1}{3}$ in. at the base, less than an inch just below the spike of greenish flowers, with purplish filaments and anthers, which before withering give the spike a diameter of a little less than four inches. *Bracts* suddenly narrowed above their bases and folded into a firm, awl-shaped scarious bristle, whitish and conspicuous on the scape, but hidden by the buds and blossoms. *Ovary* rather more than $\frac{1}{2}$ in. long by $\frac{1}{5}$ in. broad; tube sharply constricted, plainly six-furrowed. *Perianth-lobes* about the same length as the germen, rather fleshy, green with white translucent edges; style robust, suffused with purple; stigma papillose.—J. R. DRUMMOND.

CULTIVATION.—*Agave Watsoni* was purchased in 1906 from Mr. Justus Corderoy, Blewbury, Didcot, who obtained it originally from the Ghiesbreght Collection as an unnamed species. It flowered at Kew in 1907 under the usual conditions of cultivation. Unless there are other plants of it elsewhere it is likely to be lost to cultivation, as it has produced neither seeds nor offsets.—W. WATSON.

Figs. 1 and 2, anther; 3, style apex; 4, whole plant:—1–3 *enlarged*, 4 *reduced*.

Tab. 8271.

AGAVE WRIGHTII.

Central America.

AMARYLLIDACEAE Tribe AGAVEAE

AGAVE, Linn.; Benth. et Hook. f. Gen. Plant. vol. iii. p. 788.



M. S. del. J. N. Pichler.

Vincent Brooks Day & Son Lith.

L. Reeve & Co. London.

Agave (*Littaea*) **Wrightii**, J. R. Drumm.; species e grege *A. geminiflorae*, Scannag., a qua follis subulatis nec super basem linearibus augustoque loratis et laevigatis nec sulcato atriatie, perigonique lobis haud purpureascentibus conspicue differt; *A. angustissimae*, Engelm., et *A. Knightianae*, J. R. Drumm., maxime affinis; ab illa ob foliorum basem in pulvinum valde incrassatum, partem vero apicalem ad marginem utramque canaliculatam et antheras aureas nec purpureas distinguenda; a hac filamentis haud coloratis, foliorumque basi latiore magis bibboso recedit.

Truncus perbrevis, foliis numerosis modice congestis rosulatum dispositis vestitus. *Folia* carnosio-coriacea, subulata, 40–45 cm. longa, basi primum tenui lateraliter dilatato mox antice gibboso, postice leviter excavato, ultimum in pulvinum obliquum expanso, ad 3 cm. ultra imam basem in column contracta, dein ad apicem argutissimum in spinam vix 1 cm. longam abeuntem attenuata; ima basi 3.5 cm., pulvini medio fere 4 cm., collo 2.25 cm., laminae verae medio vix 0.5 cm. lata; pulvini medio 2.5 cm., collo 1.5 cm., laminae verae medio vix 2 mm. crassa; facie anteriora subcarinate convexa, obtuse et irregulariter pauci-sulcata. facie posteriore primum carinate convexa mox propter laminae margines plus minusve involutas mediumque simulae obtuse costatum versus marginem utramque canaliculata; utrinque laevigata, laete viridia sed maculis minutia albidis numerosis notata; ipsis marginibus subcorneis subfulvidis primum integris per aetatem in filamentis paucis remotioribus dilacerata. *Scapus* ad 3 m. altus, pedunculo 1. m. longo bracteis subscariosis tunc acicularibus 6–9 cm. longis instructo. *Flores* geminati in spicam 2 m. longam digesti; pedicelli doliiformis, perbreves. *Perigonii* lobi margine pallide lactei, ceterum viridescens, ultra 1.5 cm. longi, 6 mm. lati, medio subcarinati; perigonii tubus 1.25 cm. longus, inferne parum constrictus ibique 0.25 cm. latus. *Stamina* fere recta, 6 cm. longa, filamentis albidis, antheris luteis basi demum 2-fidis. *Ovarium* 1.25 cm. longum; stylus 6 cm. longus.—J. R. DRUMMOND.

The subject of our plate is a member of the *Littaea* section of *Agave* and is allied to *A. geminiflora*, Scannag. (*Littaea geminiflora*, Tagliabue), the species on which the genus *Littaea* Was originally based. The plant now figured was acquired for Kew from the collection of Mr. T. H. Kellock in 1903 under the name *A. Taylori*. That it is not the true *A. Taylori*, Hort. Williams (Gard. Chron. 1874, vol. i. p. 418)—which is stated (Gard. Chron. 1877, vol. viii. p. 621, AUGUST, 1900.

fig. 125, and Baker, Handb. Amaryllid. p. 186) to be a garden hybrid whereof *A. geminiflora* is one parent and *A. filamentosa* is probably the other—was at once recognised, and our plant was therefore tentatively treated as possibly a variant of *A. geminiflora* until it flowered in the Mexican House at Kew in November, 1908. Mr. C. H. Wright, by whom the plant was then examined, found it to differ from *A. geminiflora* in the colour of its flowers as well as in its leaves, which are smooth and subulate in place of being narrowly loriform and striate. It appeared to Mr. Wright that its nearest ally is *A. angustissima*, Engelm., first named, but not then fully characterised (Trans. St. Louis Acad. Sc. vol. iii. p. 306) in 1876, but that it is specifically distinct from Engelmann's plant. A comparison with specimens to which Dr. Trelease has attached the name *A. angustissima*, and a study of the figure and description of that species supplied by Dr. J. N. Rose (Garden and Forest, vol. iii. pp. 5 and 6) in 1893 have satisfied Mr. Drummond that Mr. Wright's conclusions are justified. Though allied to *A. angustissima*, *A. Wrightii* differs from that plant by the shorter, less constricted perianth-tube, by the yellow in place of purple anthers, by the less flattened leaf-blade which has the upper face channelled inside either margin, by the broader leaf-neck and by the much wider and much more abruptly shouldered leaf-base. As regards floral structure, Mr. Drummond points out that *A. Wrightii* approaches most closely to the plant figured as *A. geminiflora* (Bot. Reg. t. 1145) in 1828; from that plant *A. Wrightii* is readily distinguished by its much wider and more gibbous leaf-base; but, except in having white in place of coloured filaments, hardly differs as regards flowers. The plant thus depicted by Lindley is not, however, *A. geminiflora*, Scannag., and to distinguish it Mr. Drummond suggests the employment of the name *A. Knightiana*. It may be added that this species has remained not only unnamed, but undescribed, for the description associated with it in the Botanical Register has not been based on, and does not apply to, the plant there figured, but has been taken, unmodified, from the reprint in the second volume of the Journal of Science (1817) of the original account of *Littaea geminiflora* published by Tagliabue (Bibl. Ital. vol. i. p. 9) in 1816.

DESCRIPTION.—*Trunk* short, hidden by the rather close rosette. *Leaves* between fleshy and leathery, somewhat flexible, more or less erect when young, at length drooping, 16–18 in. long, tapering evenly to a fine point tipped with a short stoutish spine, from a gibbous base $1\frac{1}{6}$ in. wide at its origin, $1\frac{1}{3}$ in. wide at the shoulder whence it is gradually rounded to the unconstricted neck, nearly 1 in. thick; lower surface uniformly triangular-convex, bluntly keeled with a few irregular blunt creases; upper surface for about $4\frac{1}{2}$ in. above the neck depressed-convex with a blunt somewhat obliquely placed keel, above shallowly channelled with a rounded ultimately obsolete central ridge; smooth and dull apple-green flecked with minute white spots on both surfaces; margins sharp without teeth or prickles, but with a fine horny border ultimately shredding into hair-like whitish filaments. *Scape* about 10 ft. high, peduncular portion about 3 ft. long, with involute acicular more or less scarious bracts about $2\frac{3}{4}$ in. long gradually diminishing from the base upwards. *Flowers* in pairs arranged in a rather dense spike about 7 ft. long, on very short barrel-shaped pedicels, bracteolate. *Perianth* lobes about 8 lin. long, 3 lin. wide, revolute, dark green with creamy-white borders; tube 5–6 lin. long, little constricted. *Stamens* subulate; filaments almost colourless, nearly $2\frac{1}{2}$ in. long; anthers bright yellow, their cells at length free at the base. *Ovary* cylindric, 5–6 lin. long; style $2\frac{1}{4}$ in. long.

Figs. 1 and 2, anthers; 3, apex of style, and stigma; 4, sketch of entire plant, showing habit:—1–3 *enlarged*, 4 *much reduced*.



TAB. 5660.

AGAVE XYLONACANTHA.

Woody-thorned Agave.

Nat. Ord. AMARYLLIDÆE.—HEXANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 5333.)

AGAVE *xylonacantha*; acaulis, foliis subsquarroso-patentibus ensiformibus acuminatis apice subtrigono pungente glaucis granulatis supra planiusculis subtus convexis ecarinatis estriatis, margine cartilagineo albo aculeis dilatatis simplicibus v. furcatis instructo, scapo elato bracteis longe setaceis numerosis instructo, racemo densifloro, pedunculis pedicellisque brevibus, bracteolis subulatis, perianthii tubo brevissimo lobis oblongis obtusis erectis viridibus ovario cylindrico æquilongis. C. Koch, *Wochenschr.* 1861, p. 39.

AGAVE *xylonacantha*. Salm-Dyck, in *Bonplandia*, v. 7. p. 92. Jacobi in Otto, *Hamburg. Garten- und Blumen-Zeitung*, v. 20. p. 547.

The 'Botanical Magazine' seems especially adapted for the publication of that noble class of plants that few can afford to cultivate, and which seldom flower in cultivation, but which are of equal interest to the scientific botanist and to the horticulturist. Amongst these the Aloes and Agaves hold, after the Palms, the place of honour, and their value for decorative purposes is becoming yearly more apparent.

The subject of the present Plate is a native of Real del Monte, Mexico, whence it was sent to the Royal Gardens in 1846, by Mr. Repper, to whom the Gardens are indebted for many fine plants.

DESCR. Stemless. *Leaves* spreading all round, two to three feet long, three to five inches broad, thick, rigid, and succulent, rough with minute granulations, but neither keeled, striated, nor ribbed, plane above, convex beneath, glaucous-green, ensiform-lanceolate, gradually acuminate to the pungent trigonous apex; margin broad white, cartilaginous, beset with flat-lobed, white, vertically compressed, simple or lobed spinous processes, the lobes irregular, often uncinat.

Scape

AUGUST 1ST, 1807.

nine to ten feet high, strict, rather stout, green, beset with long, strict, subulate bracts, two to eight inches long. *Flowers* in a very dense, elongate, strict, erect raceme, three to four feet long, clustered in twos and threes on short, stout peduncles, that are subtended by a reflexed subulate bract one and a half to two inches long; each flower, with the stamens, three inches long; pedicels very short; bracteoles minute, subulate. *Ovary* cylindric, one inch long, glabrous, green. *Perianth* tube very short; lobes linear-oblong, obtuse, erect, about as long as the ovary, green. *Stamens* as long as the ovary and perianth, erect. *Filaments* yellow with a red tinge, strict. *Anthers* yellow, linear, two-thirds of an inch long. *Style* slender, shorter than the stamens; *stigma* small, capitate.—*J. D. H.*

Fig. 1. Reduced figure of the whole plant. 2 and 3. Portions of the leaf.
4. Ditto of the raceme:—*both of nat. size.*

AGAVE YUCCÆFOLIA.

Yucca-leaved Agave.

Nat. Ord. AMARYLLIDACEÆ.—HEXANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 4934.)

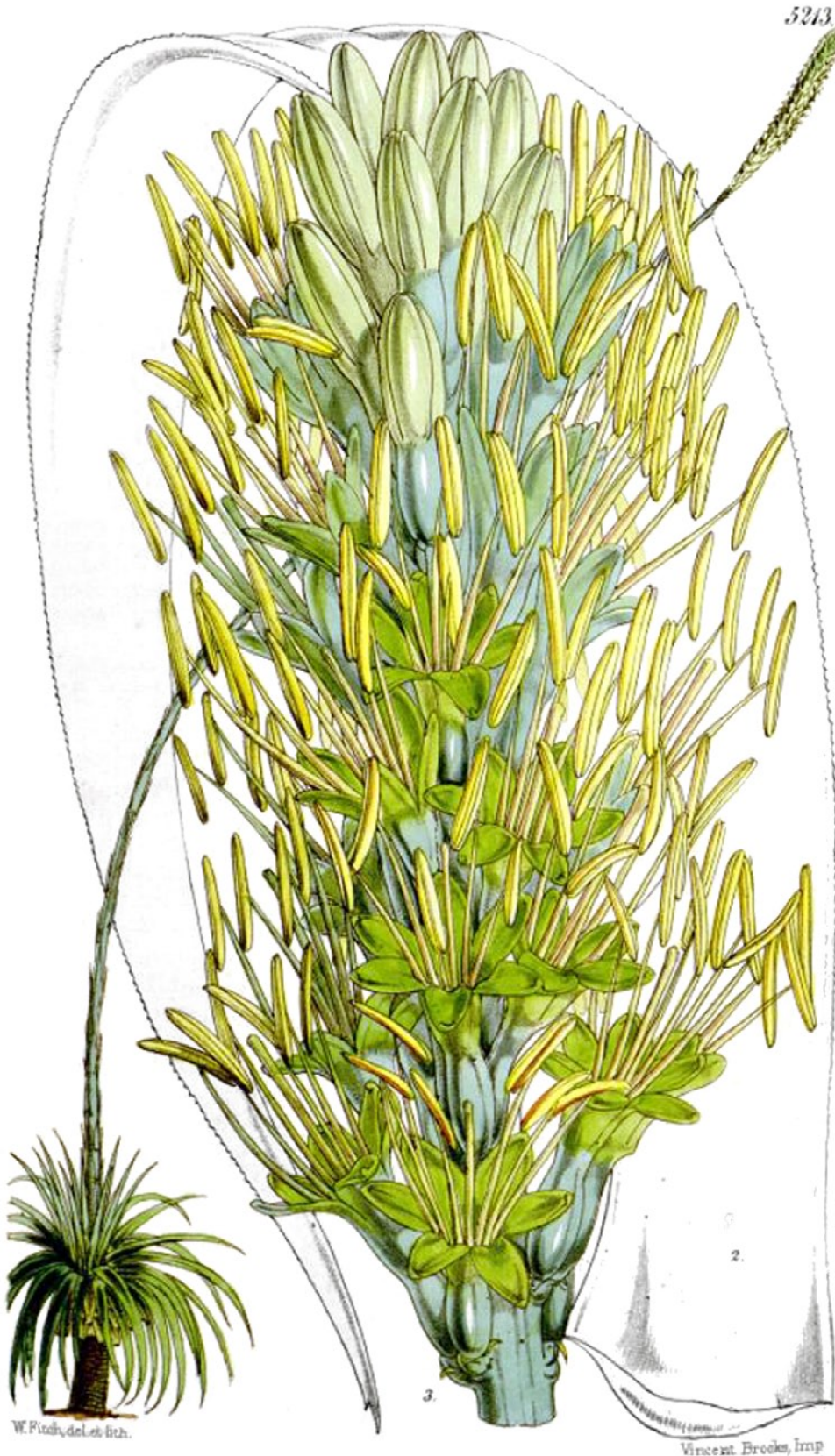
AGAVE *yuccæfolia*; trunco erecto brevi, foliis glaucis coriaceo-carnosis lorato-atenuatis supra canaliculato-concavis subtus obtuse carinatis marginibus cartilagineo-serrulatis, exterioribus recurvis, scapo longissimo (20-pedali) bracteato, spica terminali solitaria cylindrica multiflora, perianthio viridi, tubo medio contracto, limbi lobis patentissimis, staminibus corolla duplo longioribus.

AGAVE *yuccæfolia*. *Red. Pl. Liliac. v. 6. p. 328. t. 328 et 329. Haw. Suppl. p. 41. Willd. Enum. Suppl. p. 19. Schult. Syst. Veget. v. 7. p. 725. Kth Enum. Pl. v. 5. p. 830.*

This very distinct species of *Agave*, long cultivated in the Royal Gardens of Kew, but whose native country is hitherto unrecorded, was received by us from the Rio del Monte district, Mexico, and is remarkable for the great length of the flower-stem or scape in proportion to the rest of the plant,—so tall, that long before the flowers began to expand, we were obliged to remove the plant from a greenhouse fifteen feet high to a loftier building, and support the continually elongating scape against the wall. The flowers did not expand till this had attained a height of twenty feet. The distance of the flowers from the spectator renders them inconspicuous; but when more closely inspected, they are by no means insignificantly small, of a bright yellow-green, with much exserted yellow large stamens, whose filaments and anthers are partially tinged with red. Its flowers are produced in a cool greenhouse, in the summer months.

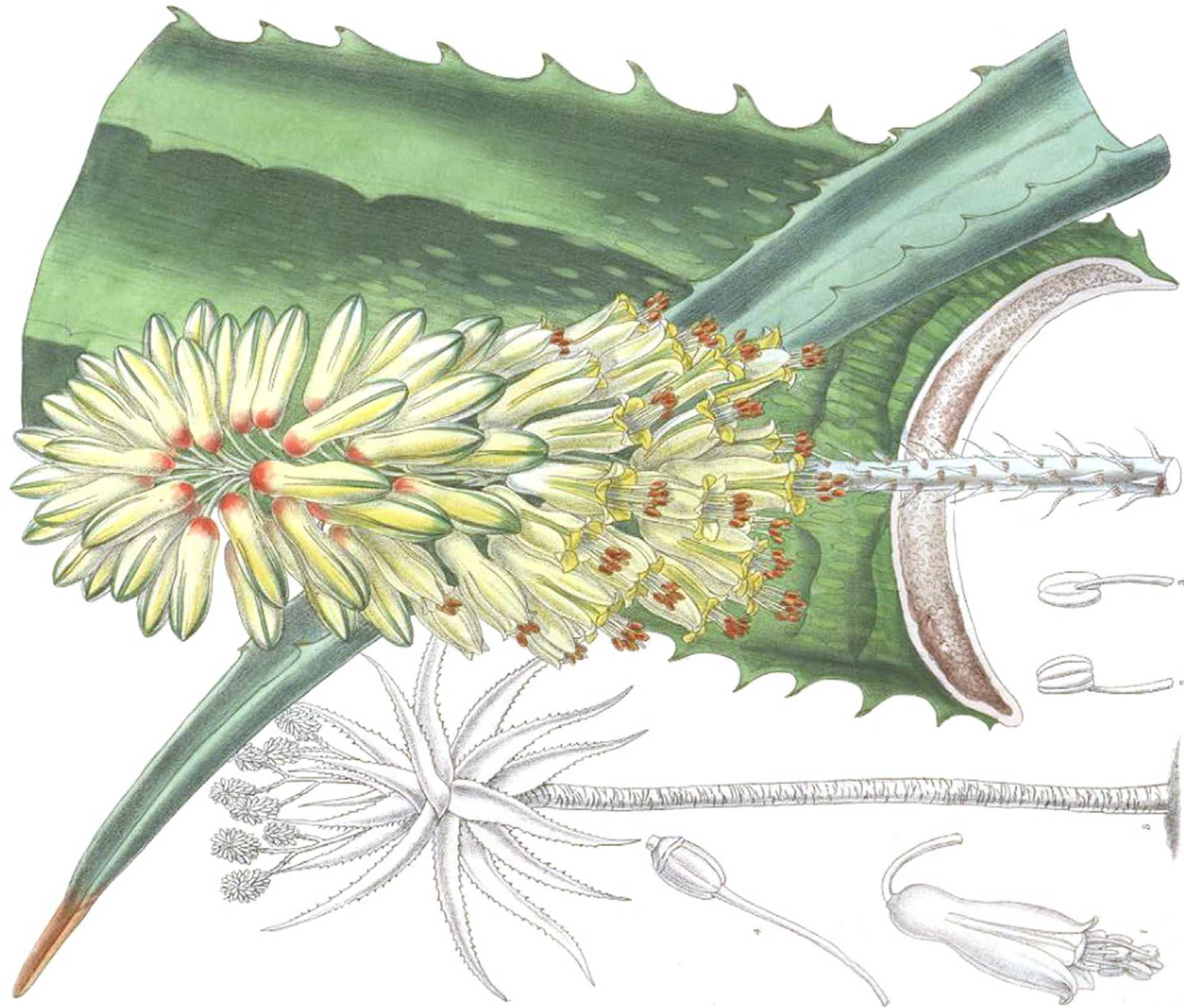
DESCR. *Stem* or *caudex* in our plant short, erect, about two to three inches thick, scarred with the persistent bases of fallen foliage. *Leaves* numerous, outer and older ones curved, inner and younger ones more erect, one to one and a half foot long, nearly two inches wide in the broadest part, lorato-acuminate, coriaceo-carnose, glaucous, canaliculato-concave above, very ob-

NOVEMBER 1ST, 1860.



tusely keeled beneath, the margin cartilaginous and minutely denticulate; *scape* rising from the centre of the foliage, gradually elongating till it has attained a height of twenty feet, one and a half or two inches diameter, erect, but not strict, clothed all the way with subulate, leafy *scales*, the lowest ones passing gradually into leaves. *Spike* cylindrical, terminal, oblong, simple, six to eight inches long. *Flowers* often two together, numerous, erect, subtended by small bracts. *Perianth* about an inch long, infundibuliform, green: the *tube* a little contracted above the ovary; *limb* of six, spreading, oval, obtuse segments. *Stamens* inserted some way down the tube, yellow, tinged with red: *filaments* twice as long as the perianth, stout, erect; *anthers* large, versatile.

Fig. 1. Much reduced flowering-plant. 2. Portion of a leaf. 3. A flowering spike:—*nat. size*.



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L. Rees & C. J. L. L. L.

M. S. & C. J. L. L. L.

TAB. 7712.
ALOE ABYSSINICA.
Native of Abyssinia.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 776.)

ALOE (Eualoe) *abyssinica*; caudice simplici 6 ped. alto ad 3 poll. diam. leviter cicatricato, foliis ad 20 apice caulis rosulatis quaquaversis 2–3 ped. longis ensiformibus sensim in apicem pollicarem cylindraceum obtusum attenuatis concavis basi 4–5 pol. latis crassitie $\frac{1}{2}$ poll. medio ad 3 poll. latis læte viridibus supra basin versus maculatis, dentibus marginalibus ad $\frac{2}{3}$ poll. distantibus majusculis deltoideis incurvis viridibus apicibus corneis brunnis, pedunculo foliis brevioris ramoso, ramis erectis bracteis $\frac{1}{4}$ poll. longis subulatis membranaceis onustis racemis ad 6 poll. longis 3–4 poll. diam. oblongis densifloris, bracteis floralibus rameis consimilibus, floribus pollicaribus nutantibus, pedicellis $\frac{1}{2}$ –1 poll. longis, perianthio anguste campanulato supra tabum integrum leviter constricto primulino (alabastro viridi infra medium cinnabarino), segmentis tubo duplo longioribus oblongo-lanceolatis apicibus intus aureis reurvis, genitalibus exsertis, antheris breviter oblongis ochraceis.

A. *abyssinica*, Lam. *Encycl.* vol. i. p. 86 (*excl. syn.*). Roem. & Sch. *Syst.* vol. vii. p. 695. Salm-Dyck, *Aloe*, sect. xviii. fig. 1. Kunth, *Enum. Pl.* vol. iv. . 521. ?A. Rich. *Tent. Fl. Abyss.* vol. ii. p. 324. Baker in *Journ. Linn. Soc.* vol. xviii. (1881) p. 174; in *Fl. Trop. Afr.* vol. vii. p. 467. Engl. *Hochgebirgsfl. Trop. Afr.* p. 161. Schweinf. in *Bull. Herb. Boiss.* vol. ii. app. II. pp. 66, 110.

A. *vulgaris*, var. *abyssinica*, DC. *Pl. Grasses*, sub t. 27; Poir *Encycl. Suppl.* vol. i. p. 294.

Aloe abyssinica is a plant of historic interest, having been brought to Europe by the celebrated Bruce, on his return from Abyssinia in 1771, and was no doubt presented by him to Louis XV. of France, for it was first described by Lamarck in 1783, from a specimen in the Jardin du Roi, given by that traveller. According to Baker, in the “Flora of Tropical Africa,” it has a wide geographical range in N.E. tropical Africa, at elevations of three thousand two hundred to nine thousand four hundred feet, between Suakin and Berber in Nubia, to Erytrea and Abyssinia. In the same and in other works the stem is described as short, but in the plant here figured it is fully six feet high. The *A. abyssinica* of A. Richard, in his “Tentamen Floræ Abyssinicae,” is cited under it by most authors, but as the MAY 1ST, 1900.

perianth is described in that work as sexfid at the apex only, I have queried that citation.

There is no record of the source whence the specimen now in the Succulent House in the Royal Gardens, Kew, was procured. It has been there for many years, together with var. *Peacockii*, Baker (*A. elegans*, Todaro, Hort. Bot. Panorm. vol. ii. p. 25, t. 29), of which the leaves are eighteen to twenty-one inches long, and five to six broad near the base, and the flowers bright yellow; its stem is more slender, five feet high.

Descr.—*Stem* (of the specimen figured) six feet high, three inches in diameter, cylindric, faintly marked with transverse scars. *Leaves* about twenty, rosulate at the top of the stem, erect, spreading, or deflexed, two to three feet long, ensiform, gradually narrowed into a cylindric obtuse brown tip, nearly an inch long, four to five inches broad at the base, with the thickness of about half an inch, bright green, with oblong, pale, narrow blotches on the upper surface towards the base; marginal teeth about two-thirds of an inch apart, deltoid, incurved, green, tips cartilaginous, brown. *Peduncles* two or more, rather shorter than the leaves, erect, branched; branches loosely covered with subulate, pale, membranous bracts about a fourth of an inch long. *Raceme* up to six inches long, and three in diameter, very dense-fld., cylindric, bracts like those on the peduncle, but rather longer; pedicels longer than the bracts, erect, arching at the tip. *Flowers* pendulous, about an inch long, narrowly campanulate, slightly constricted above the short, entire tube, pale yellow (buds cinnabar-red below the middle, greenish-yellow above it); segments twice as long as the tube, narrowly oblong; tips recurved, golden-yellow within. *Stamens* and style exserted; anthers ochraceous, shortly oblong.—*J. D. H.*

Fig. 1, flower; 2 and 3, stamens; 4, pitil:—*All enlarged.*

TAB. 6620.

ALOE ABYSSINICA, VAR. PEACOCKII

Native of Abyssinia.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Baker in Journ. Linn. Soc. vol. xviii. p. 152.*)

ALOE abyssinica var. *Peacockii*; acaulis, foliis 20–30 lanceolatis sesquipetalibus e basi 5–6 poll. lato ad apicem sensim angustatis pallide sordide glauco-viridibus margine dentibus parvis crebris deltoideis corneis rubro-brunneis patulis armatis, pedunculo valde compresso semipedali, panícula ramis 6–8 elongatis ascendentibus, racemis densis oblongis, pedicellis 6–9 lin. longis, bracteis lanceolatis pedicellis paulo brevioribus, perianthii citrini cylindrici pollicaris segmentis lanceolatis tubo oblongo duplo longioribus, genitalibus perianthio subaquilongis, antheris parvis luteis oblongo-globosis.

A. abyssinica var. *Peacockii*, *Baker in Journ. Linn. Soc. vol. xviii. p. 175.*

Probably this fine Aloe will prove to be distinct specifically from the original type of *abyssinica*, as figured in Prince Salmdyck's monograph of the genus (Sect. xviii., fig. 1); but as we have as yet only had a single plant of it, we prefer for the present to regard it as not more than a variety. It was contained in the fine collection of living plants lent lately to the Royal Gardens by J. T. Peacock, Esq., of Hammersmith, and flowered whilst in our charge in February, 1881, when the present drawing was made. Although a stout well-developed plant, it had no produced stem to the rosette, and the leaves are much broader than in typical *abyssinica*, of a very pale dull glaucous tinge and without any spots, and the tube of the perianth is half as long as the segments. The plant lately figured and described by Professor Todaro (Hort. Bot. Panorm., vol. i., p. 81, tab. 21) under the name of *Aloe percrassa* has similar leaves, in combination with a perianth in shape very like that of typical *abyssinica*, but cinnabar-red instead of yellow.

DESCR. *Leaves* twenty or thirty in a dense sessile rosette, APRIL 1ST, 1882.



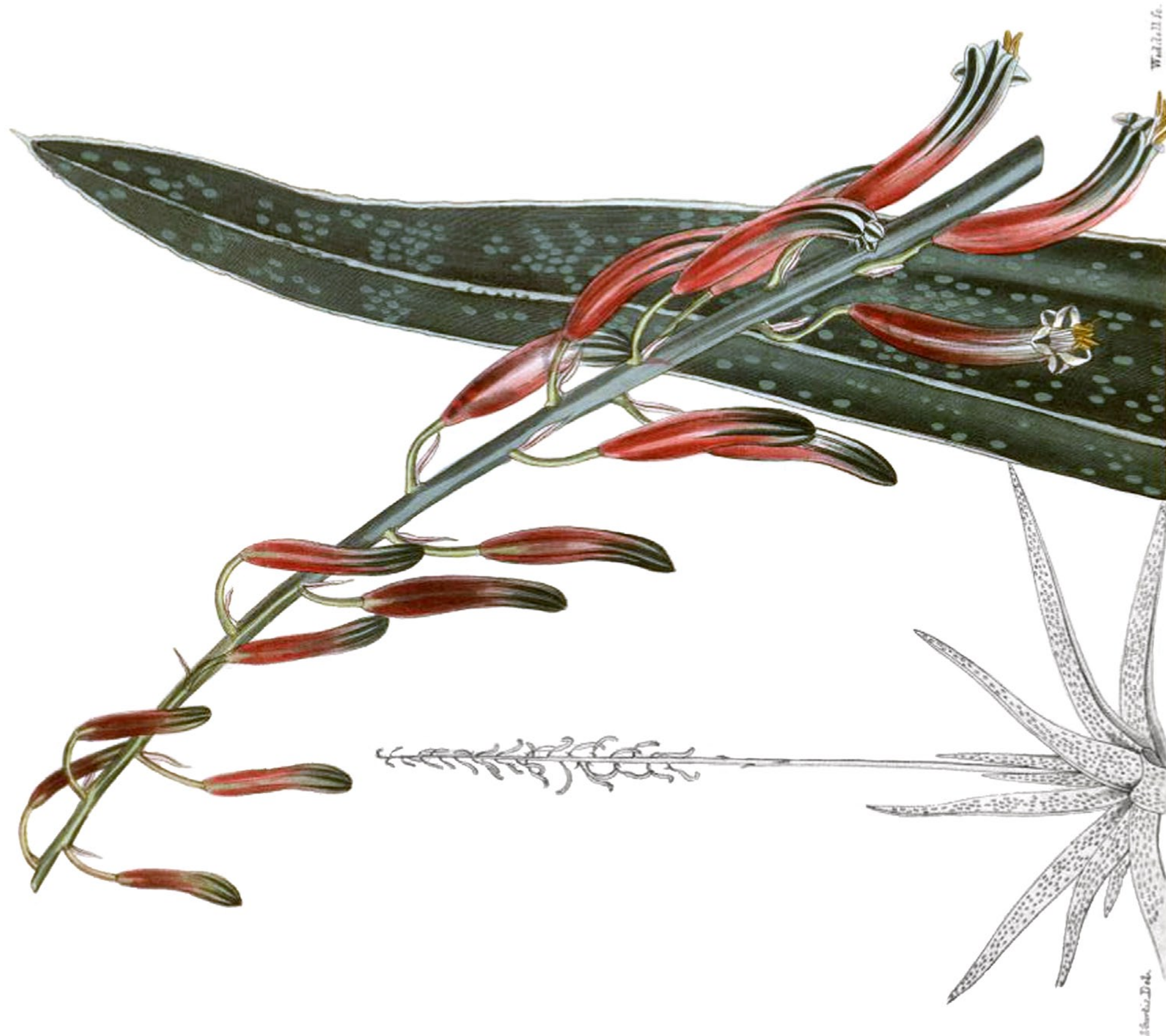
M.S. del J.N. Fitch Lith.

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lanceolate, a foot and a half long, five or six inches broad near the base, narrowed gradually to the pungent point, the colour a pale dull glaucous-green without any spots, the centre half an inch in thickness, the margins with close spreading deltoid spines with horny reddish-brown tips. *Inflorescence* as long as the leaves, a panicle with six or eight ascending branches; peduncle much flattened, glaucous, half a foot long; racemes oblong, dense, three or four inches long; pedicels about half an inch long, articulated at the tip; bracts lanceolate, rather shorter than the pedicels. *Perianth* lemon-yellow, cylindrical, an inch long; tube oblong, half as long as the lanceolate segments. *Stamens* finally reaching to the tip of the perianth-segments, or a little exserted; anthers minute, round-oblong; pollen yellow. *Ovary* oblong, yellow; style straight, reaching finally to the tip of the perianth-segments.—*J. G. Baker.*

Fig. 1, A flower cut open 2, anthers; 3, pistil; 4, horizontal section of ovary:—*all more or less enlarged.*



ALOE ACINACIFOLIA. GREAT SCYMITAR-
LEAVED ALÖE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.

Cor. erecta, ore patulo, fundo nectarifero. *Filamenta* receptaculo inserta.

Specific Character and Synonyms.

ALÖE *acinacifolia*; acaulis, foliis distichis acinaciformibus, angulis cartilagineis aculeatis, floribus racemosis pendulis. *Jacq. Eclog. t.* 31.

ALÖE *acinacifolia*; foliis erecto-patulis, latiusculis, spirali-ter distichis, inequaliter triquetris, acinaciformibus, superne concaviusculis, subtus convexis, apice acutis; atroviridibus, albido-serialiter-maculatis glaberrimis, nitidis; margine interrupte cartilagineis, basi integerimis, apice denticulatis. *Pr. de Salm. Dyck. Cat. Rais.* 23.

GASTERIA *acinacifolia*. *Haworth Suppl. Pl. Succul. p.* 49.

The genus ALÖE has by some botanists been separated into four genera, viz. ALÖE, GASTERIA, HAWORTHIA, and API-CRA; but as this separation has not been adopted in the Hortus Kewensis, and we have not studied the subject sufficiently to judge of its accuracy, we prefer preserving the original genus; although the great difference in the habit of many of the species, renders it very probable that such a division may be made with propriety and advantage.

The present species belongs to GASTERIA of DUVAL and HAWORTH, to the section *curvifloræ* of the PRINCE DE SALM DYCK, and to the second section of ALÖE in the Hortus Kewensis (*corollis curvatis basi ventricosis*).

Our

Our drawing was taken, in July 1821, from a plant perhaps the only one that, has flowered in England, in the collection of Mr. Hitchin, in Norwich. The leaves were nearly two feet long, the scape three feet and a half, two feet of the upper part of which were covered with the pendulous flower an inch and a half long curved, ventricose a little above the base.

Native of the Cape of Good Hope. Requires to be kept in the greenhouse or dry-stove in the Winter months

The outline figure is a diminished representation of the whole plant; the coloured figures of a part of the raceme of flowers, and the superior portion of a leaf.

ALOE AFRICANA, β . ANGUSTIOR. NARROWER
SWORD-LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.

Corolla erecta, ore patulo, fundo nectarifero. *Filam.* receptaculo inserta.

Specific Character and Synonyms.

ALOE *africana*; fruticosa, foliis ensiformibus glaucis amplexicaulibus, spica terminali longissima, floribus pendulis imbricatis, staminibus exsertis.

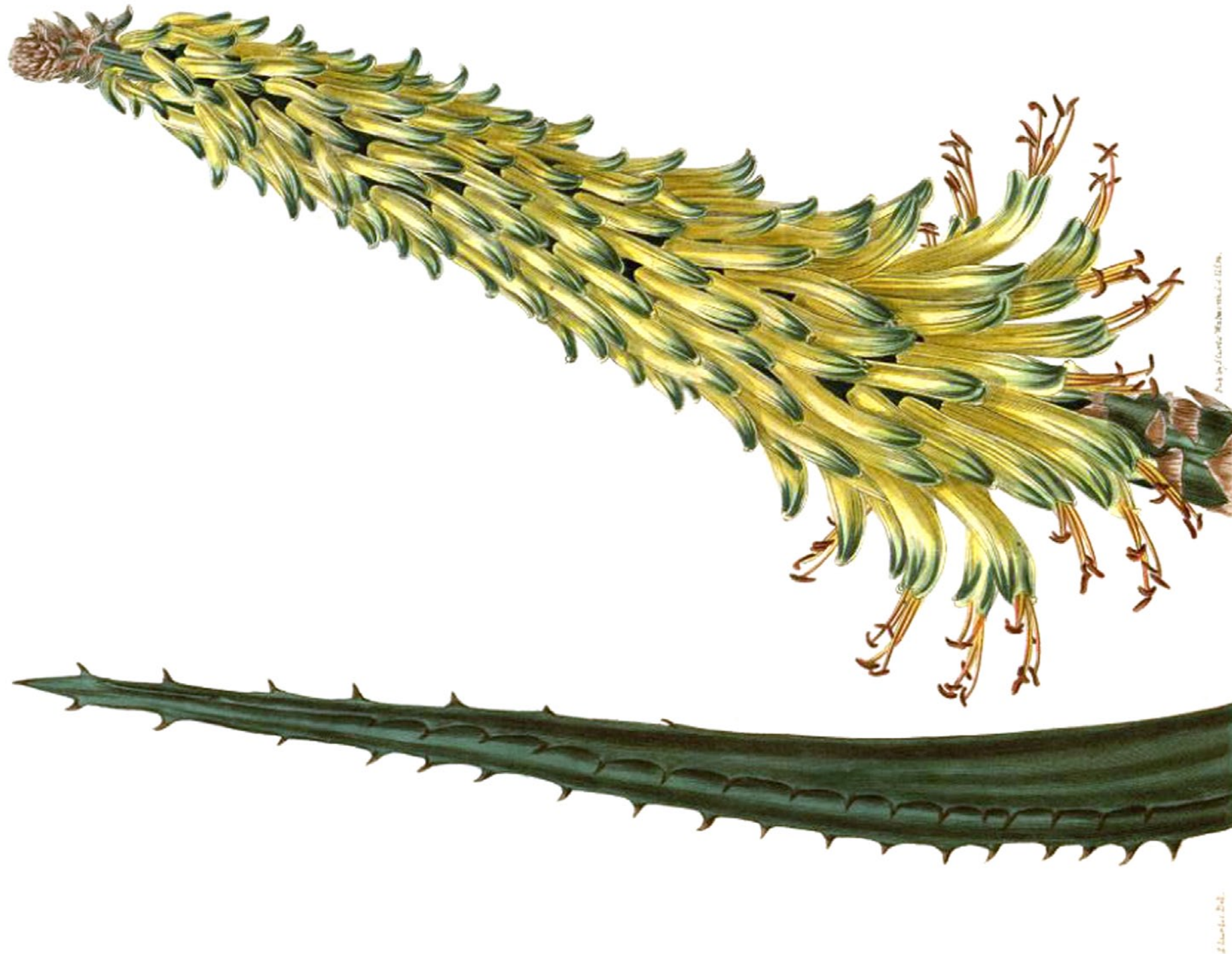
ALOE *africana*; foliis ensiformibus glaucis; inferioribus distantibus; apicibus reflexis, dentibus marginalibus igneis. *Haworth in Lin. Soc. Trans.* 7. p. 21.—*Syn. Pl. Succ.* p. 76. *Hort. Kew. ed. alt.* 2. p. 296.

ALOE *perfoliata*, β . *africana*; foliis latoribus amplexicaulibus margine et dorso spinosis, florus spicatis, caule fruticoso. *Hort. Kew. ed. 1^{ma}.* I. p. 466. *Mill. Dict. Willd. Sp. Pl.* 2. p. 185.

(β .) *latifolia*; foliis erecto-patulis superne parum recurvis. *Haworth Suppl. Pl. Succ.* p. 47.

(α .) *angustior*; foliis patenti-recurvantibus, fere duplo angustioribus quam in var. α . *Id. l. c.*

DESCR. At the time Mr. HAWORTH published his elaborate arrangement of the genus ALOE in the Seventh Volume of the Transactions of the Linnean Society, he had never seen the flowers of this species, which it rarely has been known to produce till it has acquired a very considerable size; the figures of it which have been hitherto published, have, in consequence, represented the form of the plant only, without



without any flower, such as those quoted with doubt by Mr. HAWORTH, from COMMELIN, and those in WEINMAN'S *Phytographia*, which are therefore not quoted above.

ALOE africana grows with an upright stout *stem*, marked with the vestiges of fallen leaves. *Leaves* alternate, stem-embracing, most crowded at the upper part, more or less recurved, sword-shaped, concave on the upper surface, armed at the margins, with conical rigid teeth or spines, which are of a red-orange colour at their points, some of the leaves have also a few similar spines on the under side towards their extremities; when cut, a watery moderately bitter juice exudes. From the extremity of the stem rises the scape, bearing a very long spike of greenish-yellow pendulous cylindrical flowers, which, as they expand, become ascendent at the point, and the orange-red coloured stamens and style are protruded for some distance beyond the corolla.

Our drawing was from a specimen kindly communicated by Mr. THOMAS HITCHEN, of Norwich, from his very extensive collection of succulent plants, in December 1823. Mr. HAWORTH suggests that the blossoms might have had more of a red tinge, if they had been produced later in the season, when they could have enjoyed a greater share of light.

ALOE ALBICANS. HARD-LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. No. 1352.**Specific Character and Synonyms.*

ALOE *albicans*; (*ecaudicata; flores e minoribus, bilabiati, erecti;*) foliis numerosis rosaceo-aggregatis patentibus, ovato-acuminatis, brevibus, rigidissimis, crustam cartilagineam tenuem glabram diaphanam toti eorum superficiei æquabiliter obductam pallide tranfluentibus, supra depressiusculis infra convexis, carinato-cuspidatis, marginis atque carinæ cartilagine crassiore vitreo-pellucente quandoque imperfecte dentiente; caule subquadriramoso; racemis laxius multifloris*; pedicellis flore quater brevioribus; corolla subventricoso-cylindrica pro tribus partibus concreta, bilabiato-aperta, laciniis obtusis, externis duplo angustioribus, labii superioris explicatioribus, inferioris media magis convoluta quam reliquæ fructificationis organis corolla duplo brevioribus. G.

ALOE *albicans*. Haworth in Linn. Transf. 7. 8. Hort. Kew. ed. 2. 299.

A. *marginata*. Lamarck Encyc. 1. 89. n. 17.

A. *africana humilis* folio in summitate triangulari et rigidissimo, marginibus albicantibus. Commel. Prælud. 81. tab 35; sine flore. Id. in Ic. Plant. Rar. 48. tab. 48; cum flore.



Edwards Del.

Pub. by J. G. Walworth, New York. Boston.

DESCR. *Leaves* about two inches long, about one and a half broad at the widest part; *stem* about a foot and half high; *corolla* upright-divergent, half an inch long, dingyly party-coloured with white, purple, and green; the cartilaginous efflorescence which usually shews itself on the leaves of this genus in variously dispersed tubercles, prickles, &c; is here confluent, and spreads itself in a thin even coat over their whole

whole surface; and being whitish and transparent imparts a hue that at once distinguishes the species from its congeners. Comes the nearest to *margaritifera* (N^{is.} 815, 1360) of any other known to us. Native of the Cape of Good Hope, from whence it was imported into the Kew Gardens, by Mr. MASSON in 1795; but had been known in the Dutch collections long before. A very rare plant, and according to Mr. HAWORTH (to whom we are obliged for the specimen) difficult to preserve, as well as to propagate. Should be kept in the greenhouse; blooms in August; has no scent. *G.*

NOTE.

ALOE DEPRESSA; *supra* No. 1332. At the suggestion of Mr. HAWORTH, we have looked again to the article ALOE *ferra* in the “Plants grasses” of DECANDOLLE, and are now convinced as well as that gentleman, that it is the same with *depressa* and ought to be added to the synonymy of that species; although the figure is miserably uncharacteristic.

ALOE *ferra*. Decandolle *pl.gr.* 80; *cum icone mala.*

ALOE ALBO-CINCTA.

White-margined Aloe.

Nat. Ord. ASPHODELEÆ.—HEXANDRIA MONOGYNIA.

Gen. Char. Corolla tubuloso-6-fida vel hexapetalo-partita, carnosula, basi nectarifera, in tubum connivens; limbo regulari, patulo, vel recurvo-bilabiato; laciniis ligulatis, exterioribus interiores æquales vel longiores imbricatim obtentibus. Stamina hypogyna, assurgentia, tubo æqualia, vel exserta. Stylus exsertus v. subnullus, trisuleus. Stigma simplex, v. 3, minuta, replicata. Capsula membranacea, scariosa, rotunde vel acute trigona, 3-locularis, 3-valvis, valvis medio septigeris. Semina numerosa, biseriata, subrotundo-complanata, v. trigona, alata angulosave. *Gawl.*

ALOE *albo-cincta*; caule 2–3-pedali subarboreo crasso simplici, foliis magnis 12–16-uncialibus lato-lanceolatis sensim acuminatis crassis integerrimis cartilagineo-rubro- v. albo-marginatis glaucis obscure striatis lineari-maculatisque, pedunculo seu scapo subbipedali apice paniculatim patenti-cymoso, bracteis ad basin ramorum, floribus racemosis omnibus etiam ante anthesin pendulis clavatis rubro-aurantiacis basi ventricosis.

ALOE *albo-cincta*. *Haworth, Suppl. Pl. Succul.* p. 43. *Ræm. et Sck. Syst. Veget.* v. 7. p. 698. *Kth. Enum. Plant.* v. 4. p. 525.

If the African Aloes have lost caste among cultivators of the present day, there are few, we think, who could have seen the present species, as we saw it in the summer of the present year, in Mr. Wilson Saunders's succulent-house at Hillfield, who would not deem it highly deserving of a place in their greenhouse. It is the handsomest we know of the genus by far, striking in its foliage, and still more so in its drooping flowers, which form a spreading, compound, almost umbellate cyme, of a rich yellowish-red colour. Our friend has long had it in cultivation under the name here given, and it seems quite correctly so; but this is the first instance known of the flowering of the plant. Had Haworth been acquainted with the inflorescence, he would never have made the remark, "Fortasse est mere junior *A. striatæ* (*A. paniculatæ*, *Jacq.*)."

OTCOBER 1ST, 1860.



has lately received young plants from his collector Mr. Cooper, found in Algoa Bay.

DESCR. The *stem* forms a cylindrical trunk two and a half feet high, and stout. *Leaves* few, spreading, a foot to eighteen inches long, and six inches wide, almost an inch thick at the base, quite entire at the margin, and there cartilaginous and white or tinged with red. The green of a glaucous hue, faintly striated, and marked with obscure, whitish, elongated spots. *Scape* or *peduncle* elongated, compressed, paniced at the top, bearing numerous *racemes*, arranged in a broad, flattened *cyme*, of drooping *flowers*, an inch and a quarter long clavate, and singularly inflato-globose at the base. *Stamens* scarcely exerted. *Ovary* oblong; *style* as long as the stamens; *stigma* obtuse.

Fig. 1. Flowering plant, much reduced. 2. Apex of a leaf. 3. Portion of a panicle:—*nat. size*. 4. Flower. 5. Pistil:—*magnified*.

ALOE ARACHNOIDES. SPIDER-FOOTED-
LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.

Cor. erecta, ore patulo, fundo nectarifero. *Filam.* receptaculo inferta.

Specific Character and Synonyms.

ALOE *arachnoides* (*acaulis*) foliis erecto et arctatim ambientibus, sub lanceolatis, sursum cuspidato-trigonis, exque spinis parallelis filiformibus membranaceo-lentis echinatis; bracteis pedicellos brevissimos superantibus; corolla subventricoso-cylindrica, ore ringente. G.

ALOE *arachnoides*. *Decand. Pl. Gr. liv. 9. t. 50.*

ALOE *arachnoides* α communis. *Willd., Sp. Pl. 2. p. 183. Hort. Kew. 1. p. 467. Thunb. Aloe, n. 7. Prod. 61. Mart. Mill. Dict. n. 3.*

ALOE *pumila* δ *arachnoides*. *Sp. Pl. 460.*

ALOE *africana humilis arachnoidea*. *Comm. Prelud. 78. t. 27. optime. Knorr del. 1. t. A. 11. Brad. Succ. 3. p. 12. t. 30.*

ALOE *arachnoidea humilis*. *Weinm. Phyt. Icon. 73. 6. male.*

ALOES *patte d'araignée*. *Lamarck Encyc. n. 13. var. α .*

Leaves very short, remarkable for the soft membranous spines that edge the upper part of their sides and keel, which somewhat resemble the legs or feet of some spiders, whence it takes its trivial name, and not from the leaves being covered with



with web-like filaments, as in *SEMPERVIVUM arahnoideum*, so that the English name of Cobweb Aloe given by MILLER is inapplicable. The pedicles are very short and far exceeded by the bractes. The corolla ventricosely cylindrical and bilabiate. Filaments somewhat unequal, about equal to corolla. Style very short, stigma trigonal, subcapitate.

Found by THUNBERG at the Cape, in Carro, near Swartkop's Saltpans. Cultivated with us so long since as 1725, and is now a very common plant. *G.*

ALOE ARACHNOIDES. (γ) RETICULATA. PALE
NETTED-VEINED-LEAVED DWARF ALOE.

Generic Character.—*Vid. N^m. 765.*

Specific Character and Synonyms.

ALOE *arachnoides*; (*ecaudicata*; *flores e minoribus, recti, erectiusculi*;) foliis brevibus, radicalibus, multifariis, rosaceo-aggregatis, acuminatim lanceolatis, crassis, succulentis, subtus pulvinato-carinatis, supraconvexulis, glabris, fursum trigono-cuspidatis; scapo simplice, remotius racemoso; pedicellis corolla 2-3plo brevioribus, bracteis subæquantibus; corolla sexpartita, ventricoso-cylindracea, superne bilabiato-ringente; staminibus inclusis. G.

(α) foliis margine subtusque membranaceo-echinatis. G. *Vide supra No. 756.*

(β) cespitose stolonifera; foliis atrovirentibus nitidis, ciliatis, infra papillofis. G.

ALOE *pumila*. Haworth Linn. Transf. 7. 10. Thunb. Prod. 61.

A. atrovirens. Decand. Pl. Gr. tab. 51.

A. herbacea. Mill. Dict. ed. 8. n. 18.

A. arachnoides. pumila. Hort. Kew. 1. 468. Willd. Sp. Pl. 2. 188.

A. pumila. e. arachnoidea. Linn. Sp. Pl. ed. 2. 1. 460.

A. africana minima atrovirens, spinis herbaceis numerosis ornata. Boerb. Ind. alt. 2. 131. Mill. Dict. ed. 7. 18.

(γ) foliis crassioribus, obtusioribus, pallidioribus, glabris, margine tantummodo carinaque obsolete denticulatis. G.

ALOE *reticulata*. Haworth Linn. Transf. 7. 9.



MILLER, when speaking of our variety β , mentions his "having raised a variety of that from seeds which had shorter, whiter, and smoother leaves, but which had not then flowered with him." This we take to be no other than our present plant. Mr. HAWORTH, who kindly furnishes us with the specimen, has constituted it a distinct species under the name we have cited above; and both he and DECANDOLE have specifically separated β from α ; but (as it appears to us) without sufficient grounds. At all events if this is really the variety MILLER says he raised from the seeds of β , there can be no dispute about the specific identity at least of these two; unless they should be deemed hybrid plants. G.

ALOE ARACHNOIDES (δ.) TRANSLUCENS.

TRANSPARENT-LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. N^m. 1352.*

Specific Character and Synonyms.

ALOE *arachnoides*. *Vid. No. 1314.*

(α.) *communis*. *Supra No. 756.*

(β.) *pumila*. *Supra No. 1361.*

(γ.) *reticulata*. *Supra No. 1314.*

(δ.) *translucens*; foliis pallidissimis, transparentibus, margine et carina setaceo-denticulatis, cuspidate terminali membranacea nec echinata; caule sæpe foliolis sphacelatis præ aliis numerosius stipato. G.

ALOE *translucens*. *Haworth Linn. Transf. 7. 10. n. 15. Hort, Kew. ed. 2. 2. 300.*

ALOE *pumilio*. *Jacq. Hort. Schænb. v. 4. t. 34.*

For general account of the species, see Numbers 756, 1314, and 1361. Our drawing was made from a plant that flowered this summer in Mr. HAWORTH's collection. We are informed that it is the rarest and most difficult to preserve of the four we have mentioned as varieties. G.

NOTE.

No. 1165. LILIUM CONCOLOR.

The following synonym may be added with certainty to that species, viz.

Santan, vulgo *Fime Juri*. Liliū quasi cruore infectum, caule pedali foliis angustis spicato.

Idem S. Corona imperialis fl. puniceo fanguineis punctis decorato. *Kæmpf. Amæn. Exot. 871. Fig. MSS. 141; optima.*



ALOE ARBORESCENS. NARROW-LEAVED
SWORD-ALOE.

Specific Character and Synonyms.

ALOE *arborescens*; (*subarboreo-caudescens*; *flores e majoribus, recto-cylindrici, hexapetalo-partiti, nutantes*;) foliis amplexicaulibus, in comam terminalem ambienter aggregatis, lorato-acuminatis, fere a basi attenuatis, convolutis-concavis, recurvato-reflexis, succulentis, glabris, glaucescentibus, margine ferrato-spinosis, dentibus junioribus viridibus; caule simplici, bracteis vagis confito; racemo pyramidali-oblongato, denfiore; pedicellis erecto-divergentibus, bracteis ovato-acuminatis subæquantibus; corolla his sublongiore, rotundato-trigona, ore brevi-patula; staminibus subinclusis; stylo subexserto. G.

ALOE *arborescens*. Mill. *Dict. n. 3. Decandolle Pl. Gr. 38. cum Ic. Harworth in Linn. Transf. 7. 2. n. 43. (excl. perforata. β. Linn. et Comm. Præl. 69. t. 18.) Bot. Rep. tab. 468.*

A. perfoliata. α. arborescens. Hort. Kew. 1. 466. Mart. Mill. Dict.

A. perfoliata. η. Linn. Sp. Pl. ed. 1. v. 1. 320. ed. 2. v. 1. 458. Willd. Sp. Pl. 2. 186; ubi ut et in ed. 2. Sp. Pl. ex lapsu typographico omittitur η propria varietatis nota.

A. africana caulescens foliis glaucis caulem amplexantibus. Comm. Hort. 2. 27. tab. 14.

A. caulesc. fol. reflexis margine spinosis africana. Pluk. Phyt. 129. f. 3.

ALOES à cornes de belier. Lam. *Dict. Encyc. 1. 87.*

Common Cape Tree-Aloe. *Pet. Gaz. Dec. 7 et 8. p. 10. tab. 86. f. 3.*

Caudex sometimes attaining the height of ten or twelve feet; *leaves* about two inches broad at their base; *bractes* reddish, striate, membranous-sphacelate; *corolla* of a bright red colour, greenish at the end; alternate *stamens* somewhat broader and firmer than the others as well as shorter; *anthers* while entire vermillion coloured; *style* flexuose upwards with a simple stigmatose point.

A greenhouse



A greenhouse plant. Native of the Cape of Good Hope. Cultivated by P. MILLER. Flowers in November and December. We are indebted for the present specimen to the kindness of Mr. HAWORTH, whose collection of succulent plants is probably the completest in England. G.

NOTE.

No. 663. SCILLA ITALICA.

Since our account of this species, we have assured ourselves that the *italica* of LINNÆUS is the same with the *verna* of HUDSON and subsequent authors; and of course distinct from the plant given in the above-cited *Numero*; which is however the *italica* of the *Hortus Kewensis*, specimens of which are deposited in the Banksian Herbarium. The synonymy adduced by HUDSON to *verna* is erroneous, and belongs to the plant given in our work. Thus the Linnean *italica* with the synonyms should be referred to *verna*; whilst our synonymy should be amended as follows:

SCILLA *italica*. Hort. Kew. 1. 443. Allion. Fl. pedem. n. 1896. Link et Hoffm. in SCILLIA. Ann. Bot. 1. 102; excl. passim Linnæo ejusque synonymis ad vernam relegandis. G.

PHALANGIUM, &c. Hall. Helv. n. 1212. excl. syn.

ORNITHOGALUM hispanicum minus. Clus. Hist. 1. 188. Park. Par. 139. Ger. Emac. 166. fig. 4.

In *italica* the bractes are double, in *verna* single. There is no specimen of *italica* in the Linnean Herbarium; of course the species must be made out from the synonymy and what description is left us. Is the *vincentina* really distinct from *italica*? See our enumeration of the species in No. 1185. G.

ERRATA.

No. 1293, pag. alt. l. 28, for "6" read "68."

No. 1298, l. 23, pro "*tationibus*" lege "*citationibus*."

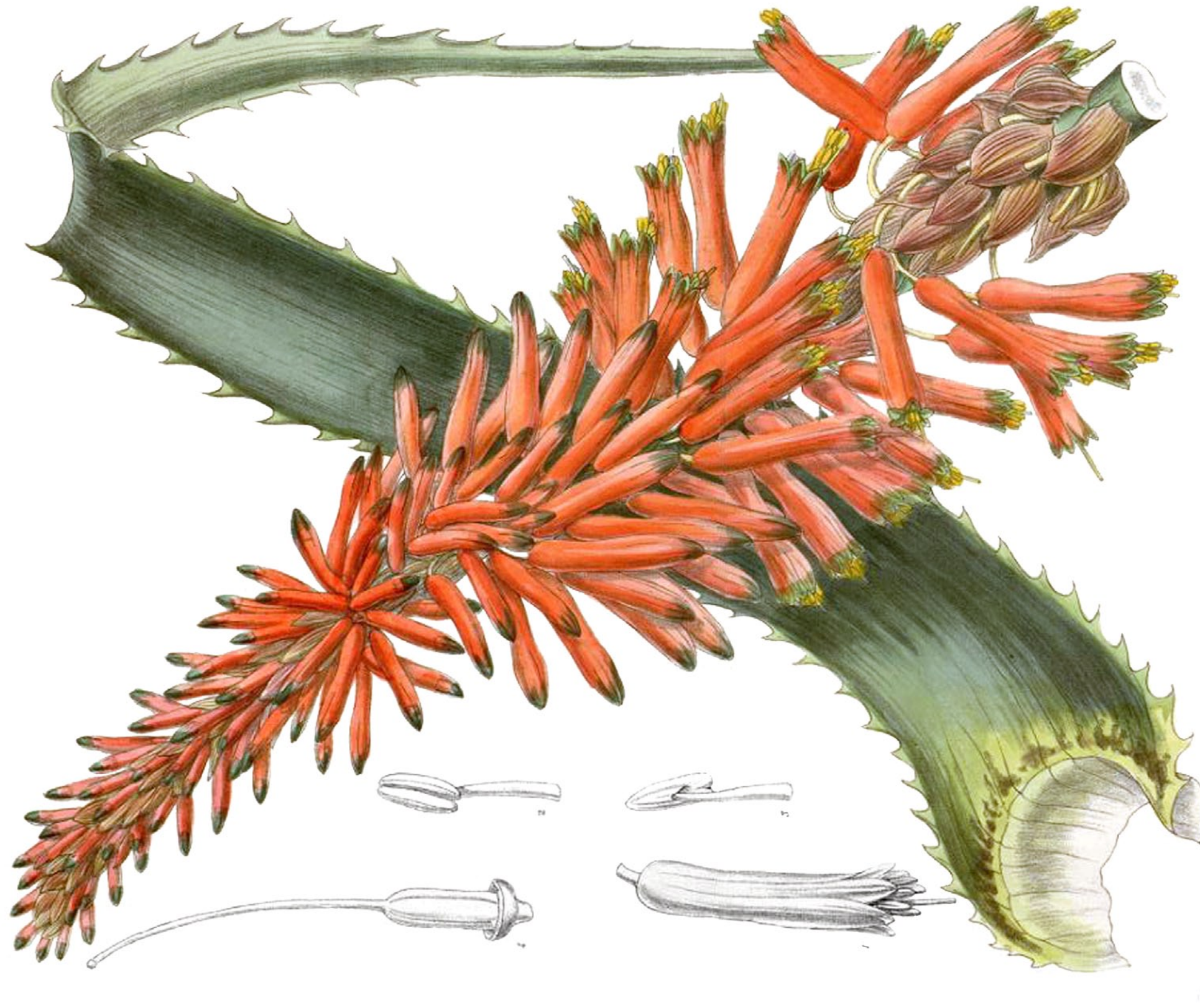
———— pag. alt. l. 28, for "No. 51" read "No. 121."

No. 1299. l. 16, for "*a*" read "*b*."

———— l. 17, for "*b*" read "*a*."

No. 1301, l. 17, pro "*Eys*." lege "*Elys*."

No. 1303, Pag. alt. l. 35, pro "CREAM" lege "cream."



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TAB. 8663.

ALOE ARBORESCENS, VAR. NATALENSIS.

Natal.

LILIACEAE. Tribe ALOINACEAE.

ALOE, Linn.; Benth. et Hook. f. Gen. Plant. vol. iii. p. 775.

Aloe arborescens, var. **natalensis**, Berger in Eng. Pflanzenr., Asphodel.-Al-
oin. p. 290; a typo foliis glaucis supra subplani pedunculoque subsimplici
differt.

Frutex altus, e basi multiramatus; rami erecti vel erecto-patentes. *Folia* ad
ramorum apices dense congesta, e basi dilatata ensiformia, supra gradatim
attenuata, reflexa vel subfalcatis deflexa, 45–50 cm. longa, 5 cm. lata, su-
pra subplana, subtus convexa, glauca, ad apicem rubescentia, anguste car-
tilagineo-marginata; dentes hamato-incurvi, inferiores 4 mm. longi et inter
se 10 mm. distantes, superiores 10–20 mm. distantes. Pedunculus erectus
vel arcuato-erectus, robustus, 40–50 cm. altus, simplex vel ramo brevi lat-
erali praeditus; racemus 20–25 cm. longus; bracteae steriles plures, late
deltoideae; bracteae fertiles dense imbricatae, ovato-oblongae, obtusae, ru-
bescentes, demum brunneae, scariosae. *Perianthium* 3.8–4.5 cm. longum;
tubus rectus vel leviter curvatus, infra medium constrictus, ruber; seg-
menta 3–5-nervia, exteriora subacuta, interiora obtusa, viridia. *Stamina*
breviter exserta.—*A. natalensis*, Wood & Evans in Journ. Bot. 1901, p. 170,
and Natal Plants, t. 258; Schoenl. in Rec. Albany Mus. vol. i. p. 43 (1903). *A.*
arborescens, Salm-Dyck, Monogr. Aloes, § 26, fig. 3; Baker in Journ. Linn.
Soc. vol. xviii. p. 175, et in Dyer, Fl. Cap. vol. vi. p. 822, partim; Berger in
Gartenwelt, vol. x. p. 13, cum icon. (1905).—C. H. WRIGHT.

The typical form of *Aloe arborescens*, Mill., which was originally described in the eighth edition of the Gardeners' Dictionary, has long been known in cultivation and was figured at t. 1306 of this work. It is readily distinguished from all the five varieties which have at various times been associated with it in its arborescent habit, its trunk at times reaching a height of over twelve feet. Mr. Berger, who has recently subjected the genus to careful study, has retained the stemless or short-stemmed forms in *A. arborescens*, and has proposed for the original tall-stemmed plant the varietal name *Milleri*. The short-stemmed form now figured, which competent South African botanists seem disposed to consider a distinct species, Mr. Berger has treated as only a variety, var. *natalensis*, and Mr. Wright has accepted Berger's view. This variety has had a history quite as prolonged as that
JUNE, 1916.

of Miller's original plant. It is recorded as having been grown at Amsterdam by Adrian van der Stel as long ago as the beginning of the eighteenth century. It was first figured in the monograph published by Prince Salm-Reifferscheid-Dyck in 1817. It is distinguishable from Miller's plant not only in habit but in having the leaves almost flat instead of channelled near the middle on the upper side and in having the raceme, at least when young, conical rather than cylindric. The inner perianth-segments are sometimes yellowish. The material for our plate has been supplied from a plant grown in the garden of Lady Hanbury at La Mortola. As a wild plant our variety has been met with by the late Dr. Medley Wood at altitudes of 800–3,000 feet in Natal, and by Dr. S. Schoenland at an altitude of 1,000 feet in Komgha, always in rocky situations. The various varieties of *A. arborescens* are among the easiest of Aloes to cultivate. They grow vigorously in poor gravelly soil provided the position given be a sunny one in a warm house, and if they receive a fair allowance of water at the root in summer. One of the stemless varieties is very commonly grown as a window plant in country cottages.

DESCRIPTION.—*Shrub*, freely branching at the base; branches erect or slightly spreading. *Leaves* densely clustered at the tips of the branches, ensiform from a broad base, gradually narrowed upwards, reflexed or falcately deflexed, about $1\frac{1}{2}$ ft. long, 2 in. wide, nearly flat above, convex beneath, glaucous, reddish towards the tips, margin narrowly cartilaginous; teeth incurved-hooked, the lower $\frac{1}{6}$ in. long and $\frac{1}{3}$ in. apart, the upper $\frac{1}{2}$ – $\frac{2}{3}$ in. apart. *Peduncle* erect or upcurved, stout, up to $1\frac{1}{2}$ ft. long, simple or at times with a short lateral branch; raceme 8–10 in. long; sterile bracts rather numerous, wide deltoid; fertile bracts closely imbricate, ovate-oblong, blunt, reddish, becoming brown and scarious. *Perianth* $1\frac{1}{2}$ – $1\frac{3}{4}$ in. long; tube straight or slightly curved, narrowed below the middle, red; lobes 3–5-nerved, the outer somewhat acute, the inner blunt, green. *Stamens* slightly exserted.

Fig. 1, perianth; 2 and 3, stamens; 4, pistil:—*all enlarged*.



TAB. 6848.

ALOE BAINESII.

Native of Natal and Kaffraria.

Nat. Ord. LILIACEÆ.—Tribe ALOINÆÆ.

Genus ALOE, Linn.; (*Benth. et Hook. f. Gen. Pl.* vol. iii. p. 776.)

ALOE *Bainesii*; arborea, 40–60-pedalis, trunco erecto copiose ramoso crassitie, 4–6-pedali, foliis ad ramorum apices dense rosulatis ensiformibus 2–3-pedali-bus viridibus leviter glauco tinctis facie canaliculatis margine acuteis parvis patulis deltoideis corneis armatis, racemis densis oblongis paniculatis, pedunculis brevibus rachibusque valde incrassatis, pedicellis brevissimis apice articulatis, bracteis minutis, perianthio oblongo splendide rubro sesquipollicari, segmentis oblongis valde imbricatis tubo subæquilongis apice patulis viridibus, staminibus styloque conspicue exsertis.

A. Bainesii, *Dyer in Gard. Chron.* 1874, p. 568, figs. 119, 120; *Baker in Journ. Linn. Soc.* vol. xviii. p. 178.

A. Barberae, *Dyer loc. cit.* fig. 122.

A. Zeyheri, *Hort. non Salmdyck.*

This species is distinctly and decidedly the finest of all the one hundred and fifty different kinds of Aloe. Although we have had it at Kew for at least twenty years, its growth is so slow that it is likely to be many years more before it reaches the flowering stage, and we are indebted to Professor Macowan for the materials upon which the present plate is founded, a coloured drawing and a photograph of a fine plant, which is one of the chief objects of interest in the Cape Botanic Garden. For many years we had a young plant at Kew under the unpublished name of *Aloe Zeyheri*. In 1874, Mr. Thiselton Dyer took great pains to work out the neglected subject of the Cape tree-aloes. The result of his investigations was published in a paper, illustrated by a series of woodcuts, in the “Gardener’s Chronicle.” In this he explained as fully as the material then obtained would allow the differences between the tree-aloe of the eastern provinces and the old well-known *Aloe dichotoma* of the west, of which Pater-son gave a figure as long ago as 1789; citing extracts from the letters of Mr. Baines and the Rev. R. Baur as to its habit and localities. At that time we supposed, judging

DEC. 1ST, 1885.

from very imperfect material, that the Natal and Kaffrarian plants were distinct species, but as further information has accumulated, this view has been abandoned, and our present idea is that there is but one species in the west, *Aloe dichotoma*, and one in the east, for which the name *Aloe Bainesii* has been maintained, both with a wide latitudinal range. Since Mr. Dyer's paper was written, Mr. Roland Trimen sent to England in 1879 a supply of flowers of the two species preserved in spirit; and now we have Professor Macowan's sketch, and may be considered to know the eastern plant quite fully. The entire plant in our plate is copied from a photograph by Mr. Barnard of Cape Town, and the remainder from a coloured drawing by Mr. H. Merstell, both communicated by the director, Professor Macowan.

DESCR. A tree, attaining a height of forty or sixty feet. *Trunk*, in a specimen measured by the Rev. R. Baur, sixteen feet in circumference three feet from the ground, forking low down, and dividing into numerous erect branches, with a smooth whitish epidermis, each bearing a rosette of spreading leaves at the tip. Spread of the crown in the plants drawn by Mr. Baines in the painting now over one of the fireplaces in the No. 1 Museum at Kew, fifteen feet. *Leaves* ensiform, two or three feet long in the young plant, much shorter in the rosettes of the mature tree, two or three inches broad a little above the base, narrowed very gradually to the apex, green with only a slight glaucous tinge, channelled down the face, margined with small spreading horny deltoid prickles. *Inflorescence* a panicle of several racemes issuing from the centre of the rosette of leaves, with a short very stout woody peduncle and a corrugated rachis nearly an inch in diameter; pedicels very short, red, articulated at the apex; bracts minute. *Perianth* oblong, bright rose-red, an inch and a half long, half an inch in diameter; segments about as long as the tube, much imbricated, spreading and tinged with green at the tip. *Stamens* exserted half an inch beyond the tip of the perianth; anthers small, oblong. *Style* exserted a little beyond the stamens.—*J. G. Baker.*

Fig. 1, The whole plant, from a photograph taken in the Cape Botanic Garden; 2, a leaf, about half the natural size; 3, peduncle; and 4, a raceme, both rather less than natural size; 5, a single flower, natural size.

TAB. 7948.
ALOE BAUMII.

Native of South-west Africa.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

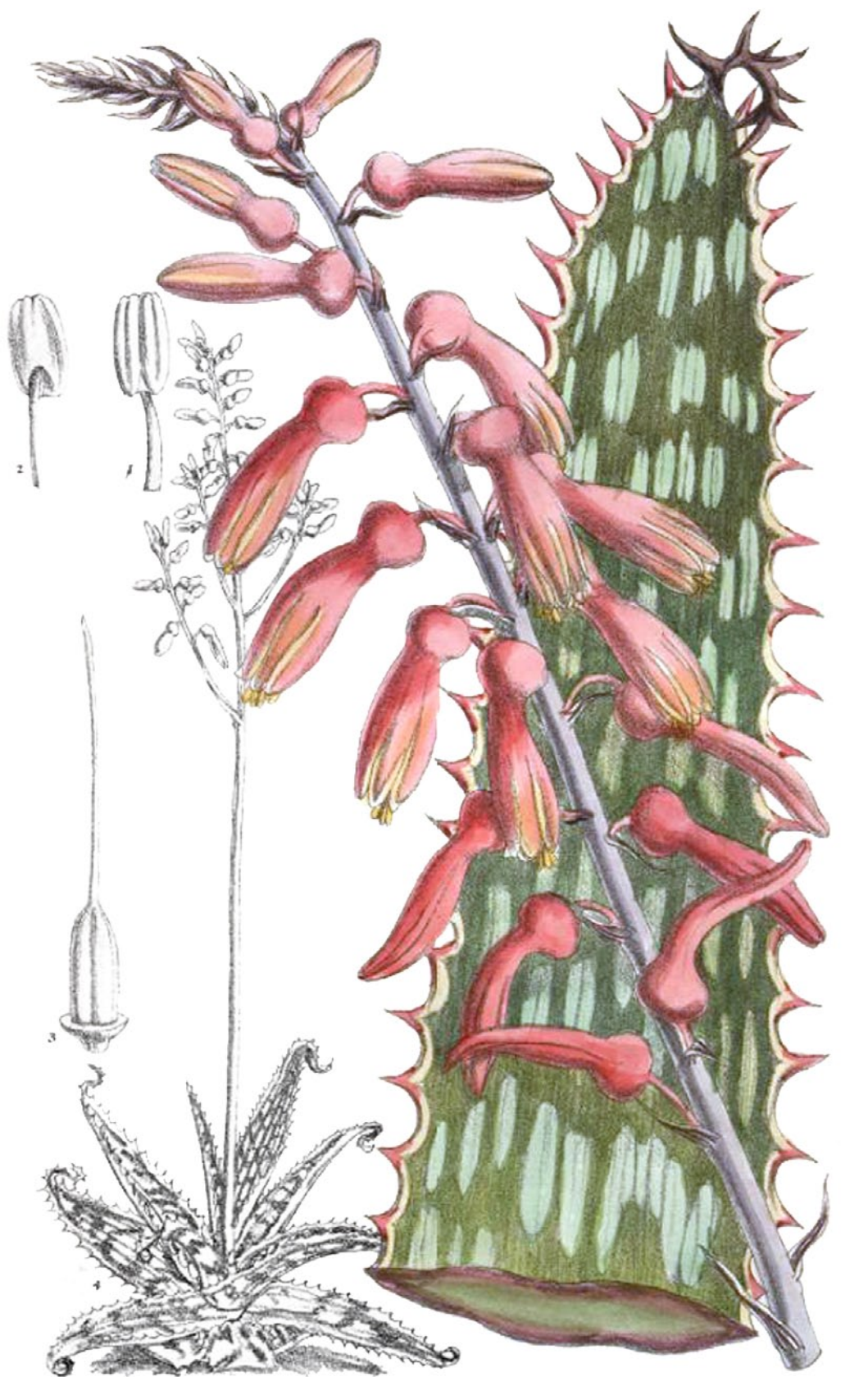
Genus ALOE, Linn.; (*Benth. et Hook. f. Gen. Plant.* vol. iii. p. 776.)

ALOE Baumii; acaulis (fere acaulis Engl. et Gilg) foliis circiter 15–20 dense ro-
 sulatis lanceolatis patentissimis 9–12 poll. longis basi 2–2½ latis 5–6 lin.
 crassis apice in plantis cultis cito plus minusve marcescentibus supra pla-
 nis maculis numerosis albidis oblongis longitudinalibus ornatis margine
 regulariter dentatis dentibus e basi lata rigidissimis corneis pungentibus
 fere rectis circiter 3 lin. longis inter se 4–6 lin. distantibus, scapo solitario
 erecto graciliusculo 3–5-pedali supra medium laxe simpliciterque ramoso
 ramis 3–10 erectis laxifloris, bracteis herbaceis albidis lanceolato-caudatis
 sursum gradatim minoribus supremis pedicellis paullo longioribus, pedi-
 cellis vix 3 lin. longis, floribus rubro-coccineis (flavido-rubrescentibus Engl.
 et Gilg.) 1–1⅓ poll. longis pendulis, perianthii tubo supra ovarium valde
 constricto lobis tubo brevioribus erectis (an semper ?) interioribus latiori-
 bus omnibus subobtusis, staminibus styloque brevissime exsertis.

A. Baumii, Engler & Gilg, in Warburg (*Baum's*) *Kunene-Sambesi Exped.* pp.
 136, et 191-2, fig. 90.

We are indebted to Sir Thomas Hanbury for the op-
 portunity of figuring this handsome dwarf Aloe. Excel-
 lent specimens were sent to Kew by Mr. A. Berger, his
 enthusiastic gardener, together with notes, and a photo-
 graph of the plant, as growing in the beautiful gardens
 of La Mortola. This was in November of last year, and
 in the previous April specimens and a photograph of an-
 other plant were received from the same source under
 the name of *A. hereroensis*, Engl., of which also a draw-
 ing was made. At Kew we are unable to distinguish them
 specifically, but Mr. Berger maintains that they are dif-
 ferent, and states, amongst other things, that the seeds
 are totally different. The seeds of *A. hereroensis*, he says,
 are among the smallest of the genus, and quite wing-
 less, whereas those of *A. Baumii* are relatively large, and
 prominently winged. We have no seeds for comparison;
 but Engler describes the perianth of his *A. hereroensis*
 as “perianthio supra ovarium hand constricto,” and it
 is very decidedly constricted in the plant received under
 that name. In both of the cultivated plants the tips of
 the leaves are crippled and shrivelled; those of the plant

APRIL 1ST, 1904.



named *A. hereroensis*, crippled much earlier, and the leaves consequently very short. There is no crippling of the leaves in the figures of the wild plants of either of the species in question.

Sir Thomas Hanbury obtained his plant from the Berlin Botanic Garden, whither it was sent by Mr. Baum, the discoverer, now Curator of the Botanic Garden at Rostock. In the narrative of Mr. Baum's journey, as cited above, it is stated that this *Aloe* is extremely common, ranging from the Shella mountains eastward to beyond the Kuito River in Angola; that is between about 14° and 20° E. long., and about 16° to 18° S. lat. The plant photographed in the book named was at Chirumba, on the Kubango River, growing in sandy, gravelly soil, at an elevation of nearly 4,000 ft.

The Kaffirs of Humbe, on the Kunene River, in the west, make cakes of the flowers of *Aloe Baumii*. They boil and press the flowers for this purpose; but we are not told whether Europeans relish the said cakes.

Descr.—Stemless or nearly so. *Leaves* from fifteen to twenty, densely rosulate, lanceolate, spreading, nine to twelve inches long, two to two and a half inches broad at the base, nearly half an inch thick, more or less shrivelled at the tip in the cultivated plants, upper surface flat, beset with whitish, oblong spots, margin regularly toothed; teeth almost straight from a broad base, very rigid, horny, sharp, about a quarter of an inch long, a quarter to half an inch apart. *Scape* solitary, erect, rather slender, three to five feet high, loosely, simply branched above the middle; branches three to ten, nearly erect; bracts herbaceous, dirty white, lanceolate, long-pointed, gradually smaller upwards, uppermost slightly exceeding the pedicels, about a quarter of an inch long. *Flowers* loosely racemose, orange-red, one to one and a half inch long, pendulous. *Perianth* conspicuously constricted above the ovary; lobes shorter than the tube, erect, inner ones broader, all somewhat obtuse. *Stamens* and style very shortly exserted.—W. B. H.

Fig. 1 and 2, anthers; 3, gyæceum:—*all enlarged*; 4, whole plant, as cultivated in Sir Thomas Hanbury's garden:—*about one-sixth natural size*.

TAB. 7399.

ALOE BRACHYSTACHYS.

Native of Zanzibar.

Nat. Ord. LILIACEÆ.—Tribe ALOINÆ.

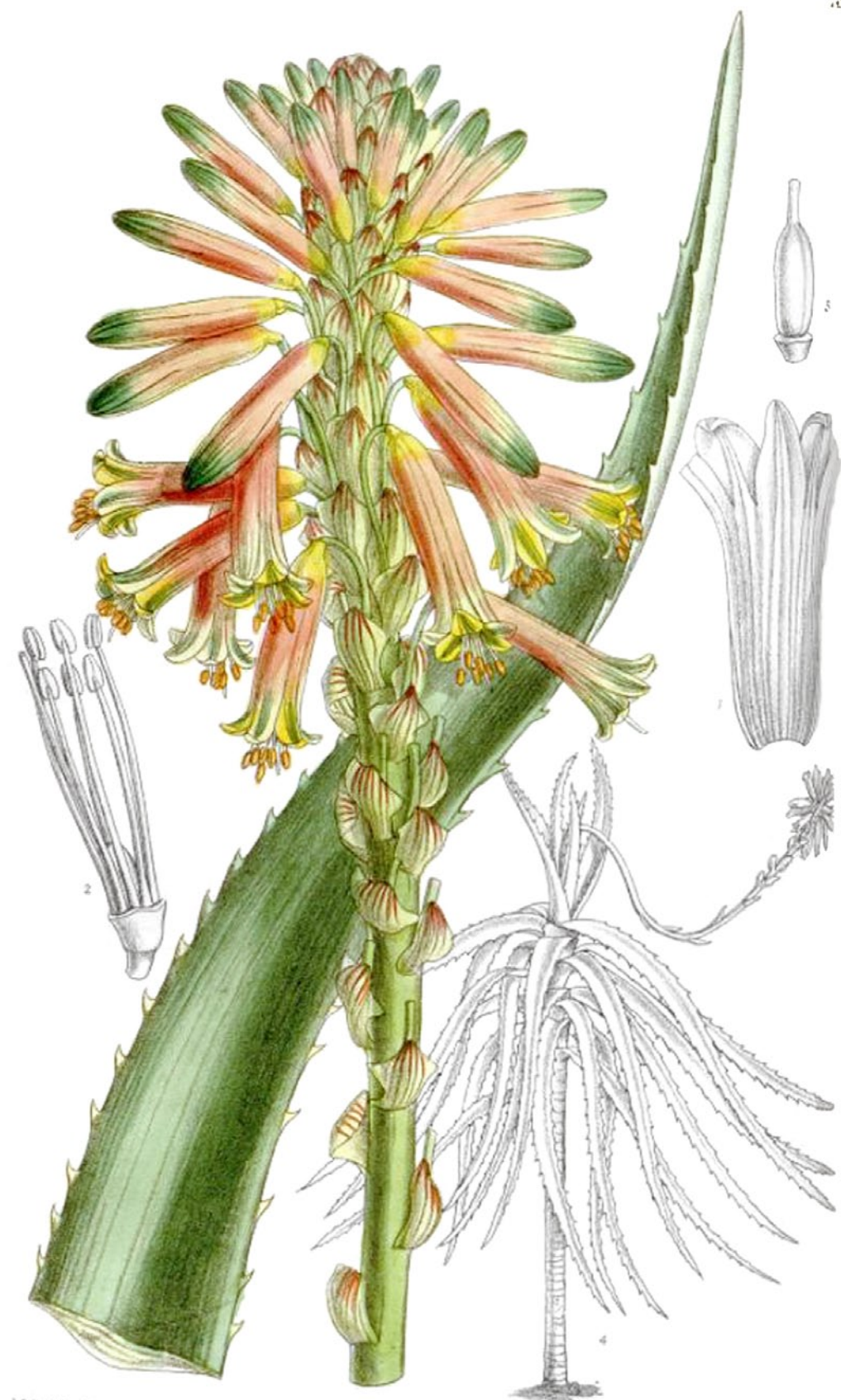
Genus ALOE, Linn.; (*Benth. et Hook. f. Gen. Plant. vol. iii. p. 776.*)

ALOE *brachystachys*; caudice elongato simplici, foliis dense rosulatis ensiformibus sesquipedalibus vel bipedalibus pallide viridibus immaculatis, aculeis marginalibus deltoideis concoloribus magnitudine mediocribus, pedunculo flexuoso elongato, racemo denso simplici, pedicellis elongatis ascendentibus apice articulatis, bracteis orbicularibus parvis, perianthio cylindrico pallide rubro apice viridi, lobis lingulatis tubo brevioribus, staminibus demum breviter exsertis.

This new *Aloe* was sent by Sir John Kirk in 1884 to the Royal Gardens, Kew, from Zanzibar. It flowered for the first time in the Succulent House in January, 1894, and proved to be a new species. It belongs to the true Aloes, with a long caudex, and dense rosette of ensiform leaves. Its nearest allies are *A. abyssinica* (Bot. Mag. t. 6620), and the Angolan *A. littoralis*, Baker, which has not yet been brought into cultivation. The number of Aloes known in Tropical Africa has increased very largely of late years.

Descr.—*Caudex* long, slender, erect, simple. *Leaves* about twenty, crowded together at the top of the stem, all except the youngest drooping, ensiform, one and a half or two feet long, two inches broad above the dilated base, narrowed very gradually to the point, bright green, smooth on both surfaces, unspotted, a quarter of an inch thick in the middle; marginal prickles deltoid, middle-sized, not brown at the tip in the cultivated plant. *Peduncle* simple, very flexuose, about as long as the leaves. *Raceme* dense, simple, oblong, half a foot long; pedicels ascending, an inch long, articulated at the tip; bracts orbicular, much

FEBRUARY 1ST, 1895.



shorter than the pedicels, pale green, with 5–7 distinct brown stripes. *Perianth* cylindrical, an inch and a quarter long, pale pink, tipped with green; lobes lingulate, shorter than the tube. Stamens finally shortly exserted.—*J. G. Baker.*

Fig. 1, A flower, cut open; 2, stamens; 3, ovary, *all enlarged*; 4 whole plant, *much reduced*.

TAB. 7915.

ALOE CAMERONI.

Native of Eastern Tropical Africa.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Benth. et Hook. f. Gen. Plant.* vol. iii. p. 776.)

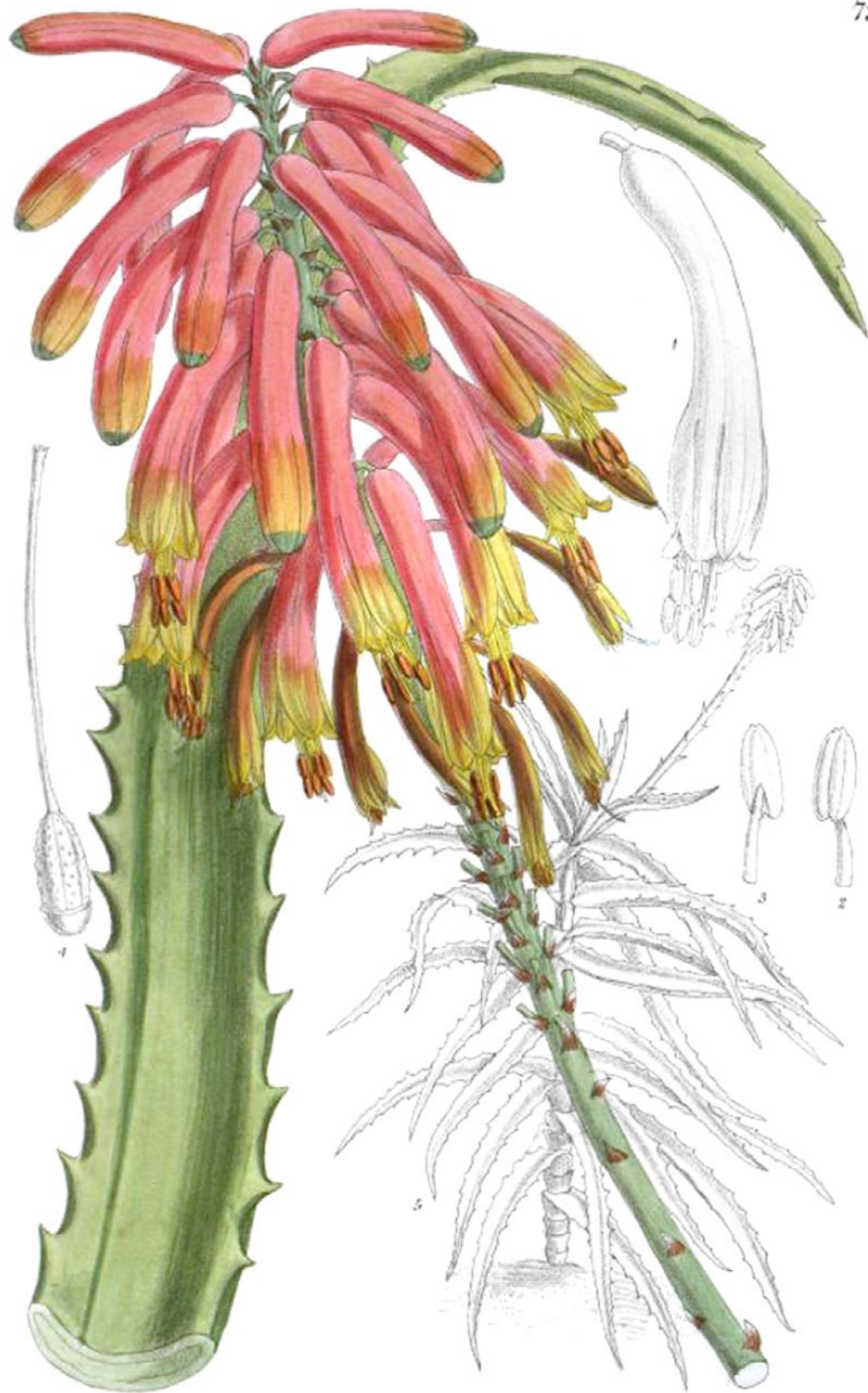
ALOE Cameroni; frutex caulescens, erectus, omnino glaber (stirps depicta caule simplici circiter bipedali), foliis sparsis patenti-recurvis angustis lanceolatis 9–12 poll. longis infra medium circiter $1\frac{1}{2}$ poll. latis acutis concavo-convexis plano-convexisve circiter 3–4 lin. crassis viridibus margine remote breviterque spinoso-dentatis spinis basi latis apice incurvis, inflorescentia axillari simplici suberecta cum pedunculo elongate circiter pedali, bracteis scariosis basi latis acute acuminatis pedicellis brevioribus, pedicellis $1\frac{1}{2}$ –2 lin. longis, floribus rubro-luteis ad apicem pedunculi confertis pendulis cum staminibus exsertis circiter bipollicaribus, perianthii tubo fere cylindrico leviter curvato infra medium leviter constricto, limbi lobis oblongis apice tantum leviter recurvis obtusis vel rotundatis, ovario obscure verruculoso, style breviter exserto.

Aloe Cameroni, Hemsl.

A. macrosiphon, *Kew Hand-list of Tender Monocotyledons* (1897), p. 173, non *Baker Fl. Trop. Afr.* vol. vii. p. 459.

It is not without some misgivings that I have described this *Aloe* as a new species, but being unable to identify it with any of the fifty species described by Mr. J. G. Baker in the "Flora of Tropical Africa" (vol. vii. pp. 454-469), I must perforce give it a name. There is always a risk in dealing with a single species of a large and critical genus such as the present, especially as many, probably most, of the species are imperfectly known. The plant from which our drawing was made was sent to the Royal Botanic Gardens, Kew, in 1894, by Mr. K. J. Cameron, of the African Lakes Corporation, and was received in 1895, and flowered in February of the present year. In a letter to the Director, Mr. Cameron says, "At the request and with the assistance of Mr. Scott Elliot [whose travels in E. and W. tropical Africa and Madagascar are well known to botanists], I have selected the following plants from our garden at Mandala." Then follows a list. In consequence, perhaps, of Mr. Scott Elliot's action in connection with sending the plants in question, it was assumed before it flowered, that this *Aloe* was the same as one

SEPTEMBER 1ST, 1903.



which he collected between Urundi and Karagwe, in German East Africa. This has been described by Mr. Baker (*Fl. Trop. Afr.*, vol. vii. p. 459) under the name of *A. macrosiphon*. The specimen consists of a crumpled, imperfect leaf, the upper part of an inflorescence, and a few old flowers; and although the species is closely allied to *A. Cameroni*, Hemsl., the material is sufficient to prove that it is specifically different. The most prominent differences are the very much larger bracts and longer pedicels.

Descr.—An erect shrub with an unbranched stem about two feet high when the drawing was made. *Leaves* separated by short but distinct internodes, spreading, recurved, narrow-lanceolate or almost linear, nine to twelve inches long, about one and a half inch broad below the middle, acute, concavo-convex or plano-convex, one-third to a half inch thick, green, margin furnished with rather distant, spinous teeth having a broad base and an incurved tip. *Inflorescence* axillary, unbranched, sub-erect, including the elongated peduncle about a foot long. *Bracts* small, scarious, broad at the base, sharply acuminate, shorter than the pedicels. *Pedicels* about one-sixth of an inch long. *Flowers* almost cinnabar red, passing into yellow towards the top, including the exserted stamens two inches long, crowded at the top of the peduncle, pendulous. *Perianth-tube* nearly cylindrical, slightly curved, slightly constricted below the middle; lobes oblong, obtuse, recurved at the tip. *Ovary* obscurely warted; style shortly exserted.—*W. Botting Hemsley*.

Fig. 1, a flower; 2 and 3, anthers; 4, gynæceum:—*all slightly enlarged*.

TAB. 8134.
ALOE CAMPYLOSIPHON.
Tropical Africa.

LLILACEAE. Tribe ALOINNEAE.

ALOE, Linn.; Benth. et Hook. f. *Gen. Plant.* vol. iii. p. 776; A. Berger in *Engl. Bot. Jahrb.* vol. xxxvi. p. 42.

Aloe campylosiphon, A. Berger in *Notizbl. Königl. Bot. Gart. Berl.* vol. iv. p. 151; *Engl. Bot. Jahrb.* vol. xxxvi. p. 59; A. *saponariae*, Haw., proximas, foliis recurvatis lanceolatis differt.

Acaulis. *Folia* circ. 15, dense rosulata, lanceolata, longe acuminata, recurvata, apice subcarinata, circ. 12 cm. longa, basi 6 cm. lata, laete viridia maculis oblongis rotundisve albidis picta, subtus albo-marmorata; margines cartilaginei, purpurei, sinuato-dentati; dentes patentes, inter se 4–8 mm. distantes, purpurei, 2–3 mm. longi. *Inflorescentia* circ. 30 cm. alta, ramosa; racemus 10 cm. longus, densiflorus; bractee 1–2 cm. longae, lanceolatae, acuminatae, scariosae, 3–5-nerviae; pedicelli erectopatente, per anthesin 1.5 cm. longi. *Perianthium* 3 cm. longum, corallinum; tubus circa ovarium globoso-inflatus deinde conspicue constrictus et manifeste decurvatus; lobi oblongi, subacuti, 1 cm. longi, ad margines pallidiores, intus lutei. *Filamenta* perianthio paullo longiora, basi complanata; antherae lineares, aurantiacae, dorsifixae. *Ovarium* oblongum, profunde trilobatum.

Aloe campylosiphon was discovered by Dr. A. Engler in Usambara, amongst rocks, on the dry summit of Bomule Mountain, at an altitude of 3,450 ft., and introduced into cultivation by him in 1902. He sent a plant to the late Sir Thomas Hanbury, K.C.V.O., in whose garden at La Mortola it first flowered in June, 1905, it was from this plant, at its second flowering in June, 1906, that our figure was taken. Mr. A. Berger writes: "it somewhat resembles the old *A. saponaria*, but differs in every way, and is a very distinct species."

In habit this species very strongly resembles *A. somaliensis*, C. H. Wright (ex W. Watson in *Gard. Chron.* 1899, vol. xxvi. p. 430; *Kew Bulletin*, 101, p. 135), but the perianth of the latter is not constricted above the ovary.

Descr.—*Stemless*. *Leaves* about 15 in a dense rosette, lanceolate, long-acuminate, recurved, slightly keeled at the apex, about $4\frac{3}{4}$ in. long, $2\frac{1}{2}$ in. wide at the base, bright green, and marked with oblong or round whitish spots above, marbled with white beneath; margins cartilaginous, purple, wavy and toothed; teeth standing out at right
MAY 1ST, 1907.



angles to the margin, $\frac{1}{6}$ – $\frac{1}{2}$ in. apart, purple, about 1 in. long. *Inflorescence* about 1 foot high, or slightly more; side branches 8 in. long, curved upwards; raceme 4 in. long, dense; bracts $\frac{1}{3}$ – $\frac{3}{4}$ in. long, lanceolate, acuminate, scarious, 3–5-nerved; pedicels $\frac{2}{3}$ in. long, becoming $1\frac{1}{4}$ in. long in fruit. *Perianth* a little over 1 in. long, coral-red; tube inflated around the ovary, then conspicuously constricted and curved; lobes oblong, subacute, about $\frac{1}{3}$ in. long, paler at the margins, yellow inside. *Filaments* a little longer than the perianth, flattened at the base; anthers linear, dorsifixed, orange. *Ovary* oblong, deeply three-lobed.—C. H. WRIGHT.

Fig. 1, flower; 2 and 3, stamens; 4, pistil; 5, whole plant:—1–4, *enlarged*, 5, *much reduced*.

ALOE CARINATA (α). KEEL-LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vide supra* No. 756*Specific Character and Synonyms.*

ALOE *carinata*; (*ecaudicata*; *inflorescentia omnino Linguae*, *supra* No. 1322;) foliis subradicali-ambientibus, numerosis, affurgerter divaricatis, a lata basi subacinaci-formi-acuminatis, supra concavis infra carinato-convexis, crassis, rigidis, tuberculis pallidis parum elevatis (*nunc in meras maculas subsidentibus*) vagis parcius crebriusve inaequaliter (*nunc partim modo*) conspersis. G.

ALOE *carinata*. Mill. *Dict* ed. 8 n. 21. (*excl. Hort. Amst.*) *Hort. Kew.* 1. 469. Willd. *Sp. Pl.* 2. 189. (*excl. Linn. Sp. Pl. et Mart. Cent.*) Haworth. *Linn. Transf.* 7. 13. n. 24.

A. *carinata*. A. *acinaciformis*. Decand. *Pl. Gr. fol.* 63. (*excl. var. B. ensiformi, quæ una cum tabula ad verrucosam, supra* No. 837, *pertinet*).

A. *tristicha*. Medicus. *Theodora*. 75. n. 15.

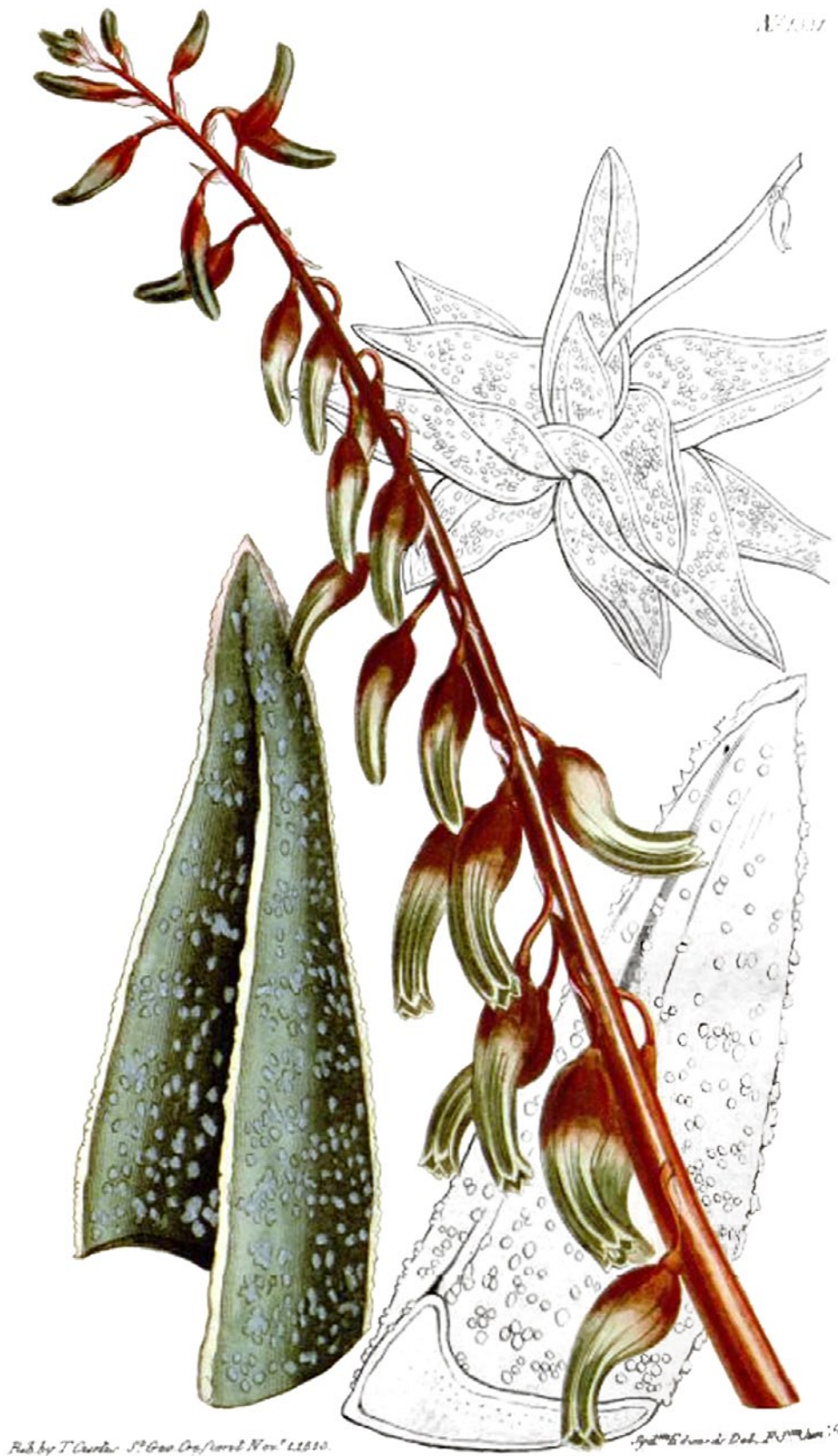
A. *africana* foliis planis latioribus conjugatis carinatis flore rubro. Mill. *Ik. tab.* 19.

A. *seffilis* fol. verrucosis apice triquetris carnosiss. Mill. *Dict.* ed. 7. n. 21; (*excl. Hort. Amst.*)

A. *africana* folio in summitate triangulari verrucis albidis notato. Weinm. *Phyt.* No. 59.

A. *africana seffilis*, fol. carinatis verrucosis. Dill. *Hort. Elth.* 22. *tab.* 18. *fig.* 20.

(β .) foliis subdistichis. G.



Pub. by T. Curtis. Sp. Ges. Op. Nov. 1810.

Sp. Ges. Op. Nov. 1810.

Native of the Cape of Good Hope. Cultivated by SHEPARD in his garden at Eltham, and by MILLER in the Chelsea garden. A greenhouse plant. Blooms late in the summer.

Leaves

Leaves of a dark, sometimes purplish-brown green. The inflorescences of *maculata verrucosa Lingua* and the present species are so nearly alike, that they are of scarcely any avail in specifically distinguishing them from each other. DECANDOLLE makes this and *verrucosa* varieties of each other; but MILLER, who had cultivated them from seed, denies their being so; and we entirely agree with him. A plant of easy culture and propagation; not quite so common in our collections as either *Lingua* or *verrucosa*. We have to thank Mr. HAWORTH for our specimen. *G.*

NOTE.

No. 1322. To the synonyms of the variety α . of *Lingua*, add;

ALOE verrucula. Medicus. Theodora. 73. n. 14.

ERRATUM.

No. 1324, pag. alt. l. 14. after "*gracile*" instead of a "comma" put a "semicolon," after which insert the word "and."

ALOE CHINENSIS.

Native country unknown.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

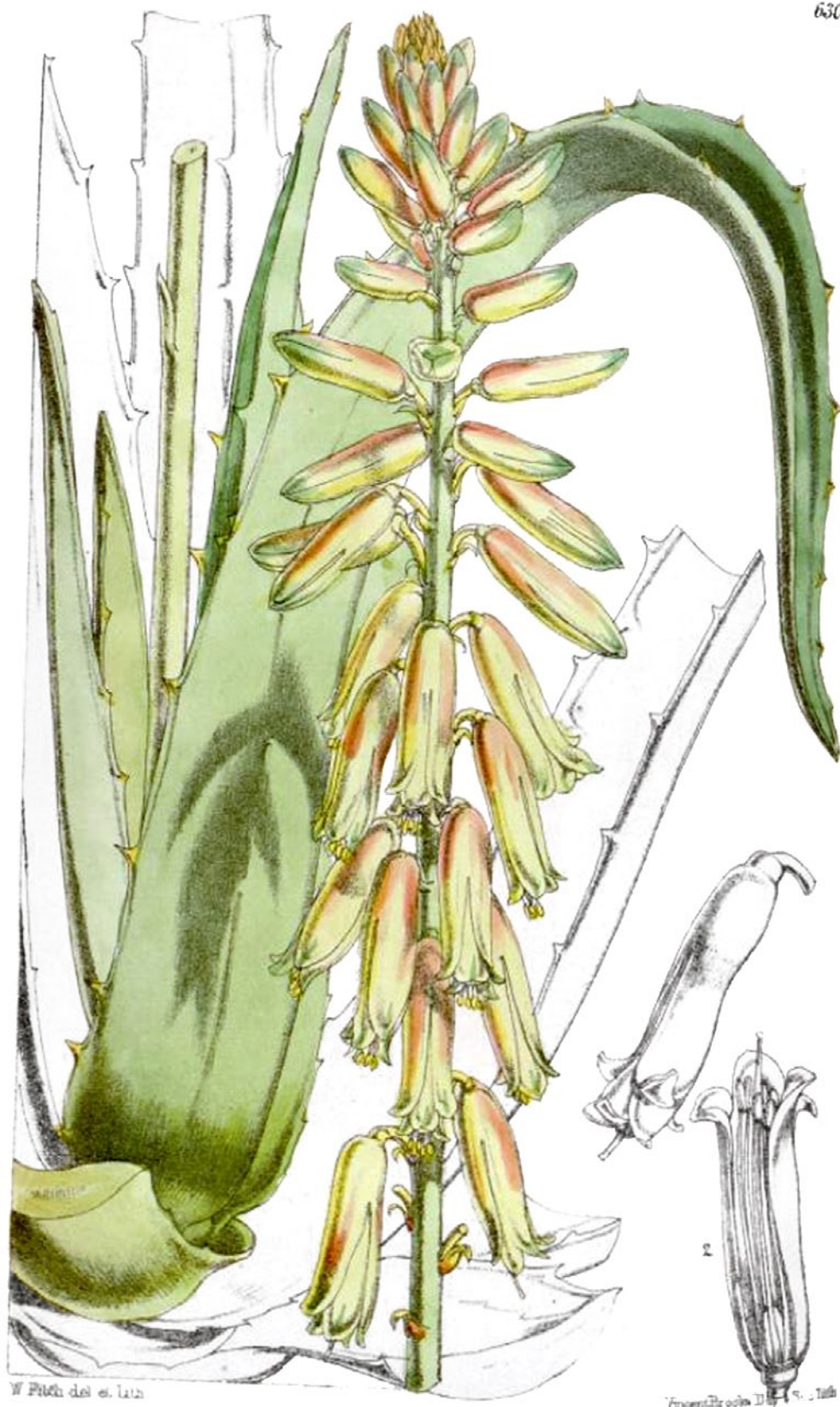
Genus ALOE, Linn. (*Kunth, Enum.* vol. iv. p. 492).

ALOE chinensis; acaulis vel breviter caulescens, caule simplici, foliis 15–20 dense rosulatis lanceolatis acuminatis semi-pedalibus vel pedalibus viridibus canaliculatis utrinque maculis albidis parvis oblongis paucis vel numerosis decoratis dentibus pallidis deltoideis marginatis, scapo simplici sesquipedali bracteis paucis deltoideis instructo, racemo sublaxo, pedicellis brevibus inferioribus cernuis, bracteolis minutis lanceolatis, perianthii lutei rubro tincti tubo brevi campanulato, segmentis superne viridi vittatis, staminibus omnibus inclusis, stylo demum leviter exserto.

A. barbadensis, var. *chinensis*, *Haworth Suppl. Pl. Succ.* p. 45; *Kunth, Enum.* vol. v. p. 522.

Trusting to a large extent to garden tradition we venture to identify the present plant with an *Aloe* which was introduced from China, by Mr. William Anderson, in 1817, which was briefly described by Haworth, from flowerless specimens in his 'Supplementum Plantarum Succulentarum' of 1819, as a probable variety of *A. barbadensis*, and is mentioned in Salm Dyck's monograph and Kunth's Enumeratio, by name only. Our present plant is clearly quite distinct specifically from *A. barbadensis*. The leaves are never more than half the length of those of that species, and are spotted more or less copiously both on back and face after the fashion of *A. abyssinica*; the raceme is very much laxer and the stamens are very much shorter. We have had it for a long time in the Kew collection, and have received it from other gardens, but never, so far as I know, with any definite information as to its native country. The drawing was made from a plant that flowered at Kew this spring. The flowers have a strong and decidedly unpleasant scent. Its affinity is with *A. barbadensis*, *abyssinica* and *consobrina*.

DESCR. *Leaves* fifteen to twenty, extending on the stem over JUNE 1ST, 1877.



a space of three or four inches in a sessile or shortly stalked rosette, which in the mature plant is multifarious, but in the young plant sometimes subdistichous, lanceolate, acuminate, varying from half a foot to a foot long, one and a half or two inches broad at the base, narrowed gradually to the point, flat at the base, where they are about half an inch thick, deeply channelled in the upper part, a sixth of an inch thick in the centre, pale green, irregularly marked on both surfaces with small oblong whitish blotches, which become less numerous in older specimens, the edge margined with copious spreading pale green deltoid prickles a twelfth or an eighth of an inch long. *Scape* simple, a foot and a half long, furnished with a few distant small deltoid bracts. *Raceme* simple, four to eight inches long, much laxer than in *A. barbadensis*, about two inches in diameter when expanded; pedicels a sixth to a quarter of an inch long, the lower ones cernuous; bracteoles lanceolate, as long as the pedicels. *Perianth* cylindrical, bright yellow, slightly tinged with red, an inch long; tube campanulate, an eighth of an inch long; segments lanceolate, keeled with green towards the tip. *Stamens* all included; filaments bright yellow; anthers oblong, small. *Style* finally just exerted.—*J. G. Baker.*

Fig. 1, A single flower; fig. 2, the same, cut open:—*both magnified.*

TAB. 8790.

ALOE CONCINA.

Zanzibar.

LILIACEÆ. Tribe ALOINACEÆ.

ALOE, Linn.; Benth. et Hook. f. *Gen. Plant.* vol. iii. p. 776.

Aloe (§ Monostachyae) **concinna**, Baker in Dyer, *Fl. Trop. Afr.* vol. vii. p. 461; Berger in *Engl. Pflanzenr.—Liliac. Asphodel.-Aloin.* p. 265, fig. 108, A-C; species *A. Dorotheae*, Berger, affinis, perianthio brevior differt.

Suffrutex caulescens, 20–32 cm. alta. *Caulis* erectus vel adscendens, inferne nudus, cicatricibus foliorum delapsorum annulatus, 1 cm. diametro, supra foliatus, 1–3 cm. diametro. *Folia* quaquaversa, late lanceolata, ad apicem acutum gradatim acuminata, parte inferiore biconvexa, 1 cm. crassa, parte tertia superiore concavo-convexa, reflexa, dentibus approximatis deltoideis curvatis albis 4 mm. longis praedita, viridia, utraque maculis ovalibus pallidioribus notata. *Pedunculus* simplex, inclinatus, 12 cm. longus; pedicelli vix 1 cm. longi; bracteae lanceolatae, scariosae, quam pedicelli breviores; racemus 6 cm. longus. *Perianthium* cylindricum, 2–4 cm. longum, 7 mm. diametro, basi rubrum, medio flavum, apice viride; tubus brevis; lobi oblongi, obtusi. *Filamenta* perianthio aequilonga; antherae exsertae. *Ovarium* oblongum, leviter 3-lobum; stylus perianthio aequilongus.—C. H. WRIGHT

The *Aloe* now figured was first discovered at Zanzibar by Sir John Kirk by whom it was presented to Kew. It has grown satisfactorily in a sunny tropical house where it flowers in the autumn and suckers rather freely. The original plant flowered at Kew for the first time not in autumn but in April, 1895, and when it was then described by Mr. Baker it still had "laxly rosulate" leaves, but by 1901 it had developed a stem thirteen inches high with scattered foliage. From the suckers several independent plants have been raised and one of these, which forms the subject of our plate, flowered at Kew in October, 1916. One of the plants had by October, 1918, developed two stems, eleven and thirteen inches high respectively, with five basal offsets from one to two inches in height. The stem is relatively slender, and the naked portion is conspicuous on account of the

JANUARY-MARCH, 1919.



J.S. del. J.P. Pritch lith.

Vincent Brooks Day & Son Lith.

L. Reeve & Co. London

gradual increase in thickness from the base upwards. Though erect or at least ascending in these cultivated plants, the appearance of the stem suggests that in wild ones it may be more or less prostrate, a suggestion strengthened by the inclined position assumed by the inflorescence. The leaves, which are remarkable for their closely set silvery white spots, are relatively small for the genus; their sheaths are rather long and completely encircle the stem. It is singular that since its original discovery this species has not again been met with in a wild state. In the division of the section to which *A. concinna* belongs are included two other Aloes, both nearly related to our plant, yet both readily distinguished from it by their flowers, for one of them, *A. squarrosa*, Baker, a Socotran species, has a shorter perianth, while the other, *A. Dorotheae*, Berger, a species of German East Africa, has a longer perianth than *A. concinna*.

DESCRIPTION.—*Undershrub* with a distinct stem, 8–13 in. high, and succulent leaves. *Stem* erect or ascending, naked at the base where it is marked by the annular scars of the fallen leaves, and is about $\frac{1}{3}$ in. thick, leafy upwards, and there over 1 in. thick. *Leaves* scattered, wide-lanceolate, gradually narrowed to the acute tip, biconvex towards the base, and about $\frac{1}{3}$ in. thick, in the upper third concave above and convex below, reflexed and beset along the margin with rather close-set, curved, deltoid, white teeth about $\frac{1}{6}$ in. long, green and marked on both sides with silvery oval spots. *Peduncle* unbranched, slender, inclined to one side, 4–5 in. long; pedicels about 3 in. long; bracts lanceolate, scarious, shorter than the pedicels; raceme 3 in. long. *Perianth* cylindric, $\frac{3}{4}$ – $1\frac{1}{2}$ in. long, about $\frac{3}{4}$ in. across, reddish at the base, yellow towards the middle, green near the apex; tube short; lobes oblong, blunt. *Filaments* as long as the perianth; anthers just overtopping the perianth-lobes. *Ovary* oblong, slightly 3-lobed; style as long as the perianth.

TAB. 8790.—Fig. 1, a flower; 2 and 8, stamens; 4, pistil; 5, sketch of the entire plant:—*all enlarged except 5, which is much reduced.*

ALOE COOPERI.

Native of Cape Colony and Natal.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn. (*Kunth, Enum. vol. iv. p. 492*).

ALOE Cooperi; acaulis, foliis rudimentariis 3–4 lanceolatis membranaceis, productis 6–8 distichis lineari-subulatis basi dilatatis suberectis chartaceis albo maculatis margine cartilagineis dentibus minutis corneis præditis, pedunculo simplici pedali vel sesquipedali foliis paucis parvis bracteiformibus præditis, floribus 12–25 in racemum corymbosum dispositis, bracteis magnis lanceolatis, pedicellis inferioribus flore æquilongis, perianthii cylindrici rubro-lutei tubo campanulato, segmentis æqualibus lanceolatis superne viridibus, genitalibus inclusis, capsulæ valvis lanceolatis.

A. Cooperi, Baker in *Gard. Chron.* 1874, p. 628.

By the thin firm texture of their suberect long-tapering leaves, this species and *A. myriacantha* differ conspicuously from all the other Aloes in cultivation. The present plant was discovered by Burchell in the year 1814 in the neighbourhood of Uitenhage, flowering in January and February. It was refound in 1862 by Mr. Thomas Cooper on grassy plains in Natal, and brought by him to this country in a living state. We have had it for some time at Kew, but it has not yet flowered with us. The drawing was made by Mr. Wilson Saunders from a plant that flowered at Reigate.

Descr. Acaulescent, the rosette surrounded by three or four lanceolate membranous rudimentary leaves. Produced leaves six or eight, distichous, suberect, linear-subulate from a dilated deltoid clasping base, tapering to a long point, a foot or more long, deeply channeled down the face, acutely keeled down the back, firm, and hardly at all fleshy in texture, green, spotted with white, especially in the lower part, furnished with a narrow pale horny border, and copious spreading minute linear teeth, which are larger towards the base of the leaf. *Peduncle* stout, terete, a foot or a foot and a half long,

AUGUST 1ST, 1878.



bearing a few small lanceolate-deltoid bract-like leaves in the upper part. *Flowers* twelve to twenty-five, arranged in a dense simple subcorymbose raceme; pedicels ascending, the lower ones above an inch long; bracts large, persistent, lanceolate, acuminate. *Perianth* tubular, reddish-yellow, with a green tip, an inch and a quarter or an inch and a half long; tube very short, campanulate; segments equal, lanceolate. *Stamens* and *style* included. Capsule about an inch long, with three acute firm lanceolate valves.—*J. G. Baker*.

Figs. 1 and 2, portion of a leaf; 3, a single flower with its pedicel and bract; 4, a flower in a later stage; 5, inner and outer segments of the perianth; 6, a flower with the segments of the perianth cut away; 7, a single stamen; 8, style and stigma:—*all life-size*.

ALOE (GASTERIA) CROUCHERI.

Mr. Croucker's Gasteria.

Nat. Ord. ASPHODELEÆ.—HEXANDRIA MONOGYIA.

Gen. Char. (*Vide supra*, TAB. 5210.)

ALOE (*Gasteria*) *Croucheri*; acaulis, foliis patulis elongato-lingulatis mucronatis inæquilateraliter trigoni angulis albo-aculatis cartilaginis denticulatis, supra concavis subtus oblique convexis lævibus maculis ovalibus albis sæpe ocellatis notatis, racemis elongatis late paniculatis multifloris, perianthis elongatis teretibus curvis medio leviter contractis roseis superne albis viridi striatis, segmentis parvis rotundatis erosis.

This, the handsomest *Gasteria* of the kind that has hitherto flowered at Kew, is named after the intelligent foreman of the propagating department, Mr. Croucher, under whose care the succulent plants of the Royal Garden are placed, and to whose zeal and especial love for this class of plants the collection owes much of its value and interest. It is closely allied to *A. candicans*, Haworth; but besides differing in colouring of the foliage, in the copiously branched, dense-flowered inflorescence, in the much larger flowers with the tube ventricose, and white with green stripes above the middle, it is in every way a handsomer species. In many respects it resembles even more closely the *A. acinacifolia*, Jacq. (Tab. Nost. 2369), but that has more attenuated leaves, and the supplementary keel of the leaf, which is on the right-hand side of the upper surface of the leaf, in *A. acinacifolia*, is on the left in *A. Croucheri* (on the right in the plate, owing to an oversight in not reversing the drawing when it was transferred to the stone).

I have followed the usual practice in regarding *Gasteria* as a division of *Aloe*, but I suspect that it will prove to be as

DECEMBER 1ST 1869.



good a genus, both in habit and floral characters as most of *Liliaceæ*.

Aloe Croucheri has been long cultivated at Kew; its origin is unknown.

DESCR. Stemless. *Leaves* numerous, spreading in all directions and recurved, forming a dense rosette, one foot long by three inches to three and a half inches broad at the base, gradually narrowed upwards to a suddenly rounded tip terminating in a hooked mucro, three-fourths of an inch to one inch in thickness; surface smooth, dark green, covered with oblong whitish spots, which have often a green eye, upper surface broadly channelled, with the supplementary keel on the left (to the right in the plate by an error), margins cartilaginous, spotted with white, minutely toothed. *Scape* including the panicle two feet to two and a half feet high, much branched above. *Racemes* numerous, eight to ten inches long, curving upwards; bracts setaceous. *Flowers* very numerous, pendulous, two inches long, pedicels one half inch long, *Perianth* tubular, cylindric, slightly curved, terete, somewhat contracted in the middle, slightly inflated above and below it; lower half pale rose-coloured; upper half white, with green veins running downwards from each of the short broad erose perianth segments. *Stamens* yellow, slightly exserted.—*J. D. H.*

Fig. 1, Reduced sketch of plant; fig. 2, portion of leaf, and fig. 8, portion of a raceme, both of nat. size;—fig. 4, flower; fig. 5, ovary;—both *magnified*.

N^o 802

ALOE CYMBIFORMIS. TENDER-LEAVED
ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. N^{um.} 765**Specific Character and Synonyms.*

ALOE *cymbiformis* (*acaulis; parviflora; brevifolia*) foliis sub
rofaceo-multifariis, elliptico-obovatis cum acumine,
depressis, subtus carinato-convexis, integerrimis, nudis,
teneris, succulentis; corolla subventricoso-cylindrica,
recurvato-bilabiata, pedicello et organo ter longiore.
Stigmate subsessili, subtrigono-capitato. G.

ALOE *cymbiformis*. Haworth on Aloe. Linn. Transf. v. 7. p. 8. n.
10.



Edwards del. Pub. by T. Curtis, St. Geo. Crescent Jan. 1. 1865. F. Sanden sculp.

This very distinct species of ALOE was, we believe, first noticed by Mr. HAWORTH, in the tract above quoted; where it is said to have been introduced from the Cape of Good Hope, by Mr. MASSON, and, as we suppose, some years back, being now pretty common in our collections; requires the same treatment as ALOE *retusa* of No. 455 of this work, to which it approaches the nearest of any of the genus known to us. Its name (with rather too much latitude by the way) is taken from the leaves. The raceme is many-flowered and distant; the corolla ascendent and six-parted quite to the base into narrow, lorate, somewhat tapered, obtuse segments; style scarcely any; bractes far longer than the pedicles and nearly equal to the corolla; leaves scarcely two inches long and several times shorter than the scape; the other distinctive characteristics are fully given in the specific character.

Our drawing was taken from a plant in Messrs. MALCOLM and Co.'s greenhouse at Kensington. G.

TAB. 6071.

ALOE (APICRA) DELTOIDEA.

Native of South Africa.

Nat. Ord. LILIACE.X.-Tribe AGAPANTHEA.

Genus ALOE, Linn.; (Endl. Gen. Plant., p. 143).

ALOE (*Apicra*) *deltoidea*; robusta, caulescens, foliis $\frac{3}{4}$ –1-poll. longis quinque-fariis confertissimis horizontalibus crassis deltoideo-ovatis acuminatis pungentibus supra planis subtus convexis carinatis marginibus planiusculis carinaque superne eroso-serrulatis luride viridibus lævissimis, racemo spicæformi elongato flexuoso multifloro, pedicellis brevissimis, bracteolis deltoideo-lanceolatis pedicellum superantibus, perianthii erecti tubo $\frac{1}{3}$ -pollicari oblongo-cylindraceo virescente lobis brevibus late obovatis sub-2-lobis erosis albis ter longiore, staminibus inæquilongis inclusis, antheris brevibus, ovario lineari-oblongo, stylo brevicurvo.

This singular succulent belongs to the same section of Aloe with *A. foliolosa* (Tab. nost. 1352), *pentagona* (Tab. nost. 1338), *spirella*, *imbricata* (Tab. nost. 1445), *spiralis*, etc., of Haworth, which are all closely allied, having 5-fariously densely imbricating leaves, that clothe the stem throughout, and terminal racemes of erect flowers, with an oblong tube and short segments. It differs from the first-named of these chiefly in size, and in the leaves not being spirally disposed except on the young shoots, though I should much doubt this character being of any value. It has long been cultivated in the Royal Gardens, where there is no record of its introduction. The perfect regularity with which the leaves are superposed in five series, and the columnar stem, render it a very striking object in the greenhouse. It flowers in May, and is easily propagated by offshoots from the base of the stem.

DESCR. *Stem* strict, erect, wholly clothed with leaves from the very base upwards, emitting stout cylindric roots, and surculi from the base; diameter across the leaves two inches. *Leaves* three-quarters to one inch long, most densely 5-

DECEMBER 1ST, 1873.



fariously imbricate, quite horizontal, deltoid-ovate, acuminate, pungent, deep shining green, quite smooth and glabrous, upper surface nearly flat, under convex with a slight keel, margins thick and flattened, the edges of the margin as well as the keel beyond the middle are minutely serrulate. *Raceme* spiciform, a foot long; peduncle and rachis stout, cylindric, slightly compressed towards the base, light-brown, glaucous, with two or three scattered ovate-lanceolate bracts. *Flowers* lax, very numerous, erect, one-third inch long, greenish-white; bracteole deltoid, much exceeding the very short pedicel, appressed to the perianth, greenish-white. *Perianth-tube* cylindric-oblong, light green, almost terete; limb of six short broad obovate obscurely two-lobed and erose segments. *Stamens* included, unequal; anthers shortly oblong. *Ovary* subcylindric, style curved.—*J. D. H.*

Fig. 1, Back, and 2, front, of a leaf; 3, transverse section of do.; 4, flower pedicel and bracteole; 5, vertical section of perianth:—*all magnified.*

ALOE DEPRESSA. SHORT-LEAVED
PERFOLIATE ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. Num.* 756

Specific Character and Synonyms.

ALOE *depressa*; (caudex brevis crassus vel totus foliatus vel deorsum denudatus; flores e majoribus, trigone tubulosi, recti, penduli;) foliis ambientibus, divaricatis patentibus, ovato-acuminatis, brevibus, e flavo-virentibus glauco rore obnubilatis, rigido-crassis, succulentis, dentibus acutis albido-cartilagineis remotius margine et fubtus finem versus armatis, aliorumque rudimentis vagis macularum facie in utraque pagina parcissime conspersis; racemo spicatis elongato, parco, erecto; pedicellis erectis bracteis subæquantibus corolla duplo vel ultra brevioribus; staminibus inclusis. G.

ALOE *depressa*. Haworth. *Linn. Transf.* 7. 16. n. 33.

A. *perfoliata*. v. *depressa*. Hort. Kew. 1. 467.

A. *perfoliata*. ξ . Linn. *Sp. Pl. ed. 2. v. 1.* 458. Willd. *Sp. Pl. 2.* 186.

A. *Brevioribus*. Mill. *Dict. ed. 8. n. 8.*

A. foliis amplexicaulibus utraque spinosis floribus spicatis. Mill. *Dict. ed. 7. n. 8.*

A. *africana* caulescens foliis glaucis brevissimis, foliorum parte interna et externa nonnihil spinosa. Comm. *Præhud.* 72. (nec uti plerisque 71.) tab. 21. sine fl.



Robert J. Currier. 17 Geo. Crayman & Son. 1. 1892.

Printed by Edwards Del. R. J. Currier.

Stem simple; *leaves* about two inches broad at the base, five long; *corolla* pale red, greenish towards the end. MILLER in his Dictionary, under the head ALOE, has evidently committed some blunder concerning the eighth and sixteenth species.

species. He has quoted the same synonym to both; while the specific character of each is reciprocally reverted by the description in the subjoining observation: we have adopted that, the specific character of which applies to our plant, as have the editors of the Hortus Kewensis. Mr. HAWORTH has quoted the one, of which the description in the observation only is applicable.

Native of the Cape of Good Hope. Blooms in the summer. We are obliged to Mr. HAWORTH for the present specimen. *G.*

ALOE FOLIOLOSA. SMALL-LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.

Infloresc. feorfim bracteata. *Cal.* o. *Cor.* infera, tubuloflo-
fexfida vel hexapetaloideo-partita in tubum connivens, ore
fummo regulari patula vel recurvatim bilabiata, carnofula
firma, directa flexave, erecta pendulove-cernua; laciniis
ligulatis, exterioribus interiores alternas ifometras bifve
longiores imbricantibus. *Stam.* immediate hypogyna, de-
flexo-affurgentia, longitudine alternantia, tubo æqualia vel
exferta. *Fil.* tereti-gracilefcentia (*in quibusdam statim post
anthesin flexuofe detensa velutque articulofa*). *Anth.* erectæ, ob-
longæ. *Stylus* exfertus vel fubnullus trifidus. *Stigm.* fimplex,
vel 3 minuta replicata. *Caps.* erecta, membranacea, fcariofa,
diverfimode oblongata, rotunde acuteve trigona, venofa;
triloc., trivalv., valvis medio feptigeris. *Sem.* numerosa,
biferialia, fubrotundo-complanata alata, angulofave angulis
membranacee extenuatis. *G.*

OBS. Plantæ perennes fempervirentes ftoloniferæ alterne indivife ac epe-
tolate craffifoliæ; rhizoma nunc exiliter fufiforme neque ex humo emergens,
nunc in caudicem palmoidee arboreum ac ftolonizanter ramosum affurgens;
folia fuccofa, convolute amplexicaulia, plurifariam difpofita, modo bifaria
a plano obverfa, rarius decuffata; imbricatim ambientia, modo equitantia,
raro diftantia; radicalia, vel inferiorum cafu excelfe terminalia, nunc axim a
fummo ad imum compade loricantia; fquamiformia vel fupra tres pedes longa;
pulvinatim laxata vel hinc gibbofa vel plano-convexe depreffa; ab infra lati-
oribus cufpidatim attenuata, nunc linguiformia rotundo fine terminata; lævia,
vel tuberibus verruculis papillifve cartilagineis in parte vel totaliter fcabrata
aut tantum marginata; nuda, vel fpinis mollibus innocuis vel duriffimis
pungentibus quadantenus aut per totum muricata, duntaxatve ciliata; cau-
lis interfoliaceus fimplex vel ramosus, foliolis bractæformibus vagis perpau-
cis vel multis fquamatus; racemus (ut et partiales) umbellatim contractus,
vel fpicatim pyramidatus, vel diffufe elongatus; pedicelli fubnulli corolla-
mve æquant, uniflori, erecti refractave collapfi, bractea ipfis longiore bifve
breviore excepti. A contermina TRITOMA dignofcatur capsula nequaquam car-
tilaginea nec ovata, femnibus marginatis, corolla carnofiore neque (æquatis
imbricationis rugis) explicata, ftaminibus declinato-inflexis, foliorum infuper
habitu haudquaquam fcirpoidee gramineo. *G.*

Specific

Specific Character and Synonyms.

ALOE *foliolosa*; (*caudex totaliter imbricato-foliatus; flores e minoribus, erecti, regulares;*) foliis plurifariam ambientibus, squamiformibus, ovato-acuminatis, transversim latoribus, parum (*pro genere*) crassis, rigidis, glabris (*junioribus perobscure denticulatis*), supra patulis, caudicem a summo ad imum squarroso-loricantibus; caule simplici, filiformi, flexili; racemo laxo; pedicellis corolla duplo brevioribus; corolla recta, cylindracea rotundatis angulis, ore brevissimo regulari patula; staminibus inclusis. G.

ALOE *foliolosa*. Haworth. Linn. Transf. 7. 7. n. 3. Hort. Kew. ed. 2. v. 2. 298.

Native of the Cape of Good Hope, from whence it has been introduced into our gardens, by Mr. MASSON, since the publication of the Hortus Kewensis. The *leaves* are the smallest and thinnest of any species known to us, of a dark green colour. Nearly allied to *spiralis*. Is propagated with more difficulty, but blooms more freely than that. May be kept in the common greenhouse. Had never been distinctly recorded by any author preceding Mr. HAWORTH, to which gentleman we are indebted for the specimen. G.

TAB. 6520.

ALOE GREENII.

Native probably of the Cape.

Nat. Ord. LILLIACEÆ.—Tribe ALOINÆÆ.

Genus ALOE, Linn.; (*Kunth Enum.* vol. iv. p. 492.)

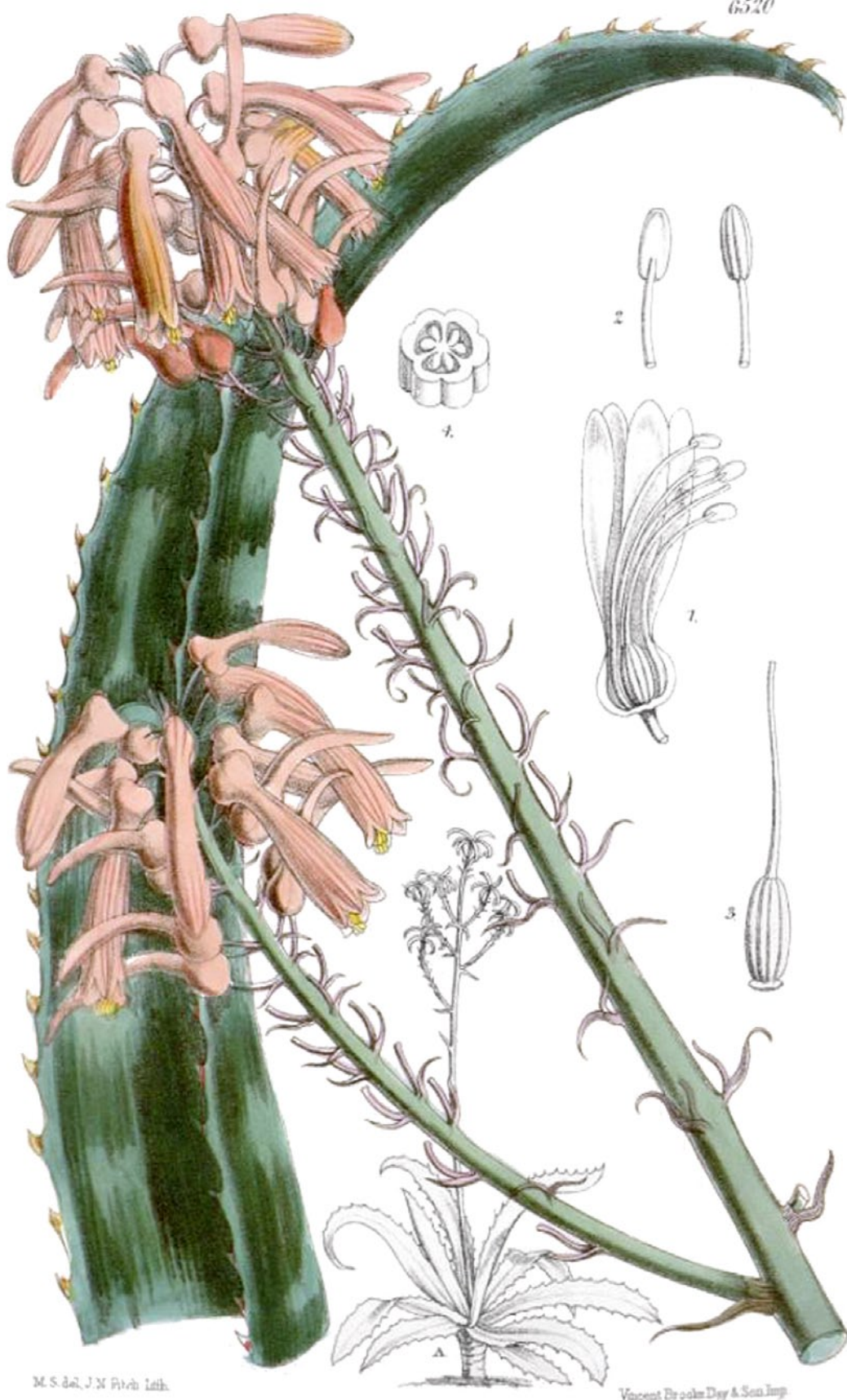
ALOE Greenii; breviter caulescens, caule simplici, foliis 10–12 dense rosulatis lanceolatis sesquipedalibus viridibus obscure verticaliter lineatis et maculis copiosis oblongis albidis confluentibus irregulariter transversaliter seriatis decoratis, pedunculo subpedali, panicle ramis strictis 5–7, racemis oblongis vel demum cylindricis, pedicellis flore subtriplo brevioribus, bracteis lanceolatis acuminatis pedicello subæquilongis, perianthii pallide rubri 15 lin. longi tubo medio insigniter constricto, segmentis oblongis tubo 2–3-plo brevioribus, genitalibus demum perianthio subæquilongis.

A. Greenii, Baker in *Journ. Linn. Soc.* ined.

This is a well-marked new species of *Aloe* of the group *Pictæ*, which we have for some time cultivated at Kew. All that I can make out for certain about its history is that it was received under the name which I have adopted from Mr. Wilson Saunders, and that this name was given to it by Mr. T. Cooper, but that it is not one of the plants which the latter collected in his travels in Cape Colony, which yielded so many interesting discoveries in this set of plants. In the *Pictæ* group of Aloes the present plant may be readily distinguished by its elongated racemes and by the strong construction of the perianth-tube at the middle. Our plate was drawn from a specimen that flowered in the Succulent House at Kew in October, 1879.

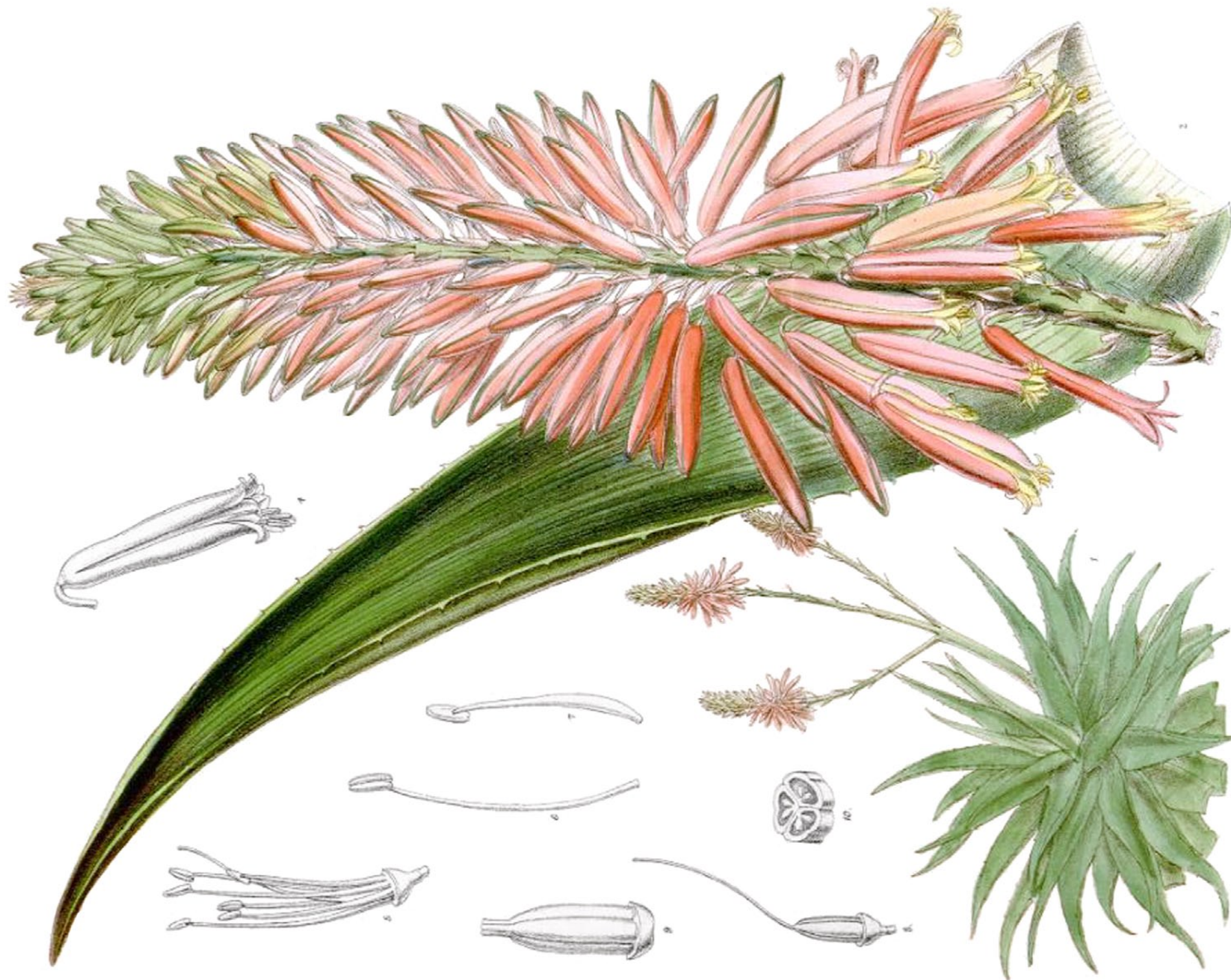
DESCR. Well-grown plants furnished with a short simple stem below the rosette of leaves. *Leaves* twelve or fifteen in a dense rosette, lanceolate, fifteen to eighteen inches long, three inches broad in the lower part, narrowed gradually from two-thirds of the way down to a long point, flat in the lower half on the face to a late stage, a quarter or a third of an inch thick in the centre, bright green, with

OCTOBER 1ST, 1880.



obscure vertical whitish lines and broad irregular transverse bands of confluent oblong whitish spots, the crowded deltoid-cuspidate ascending marginal prickles an eighth or a sixth of an inch long, connected by a very narrow horny line. *Peduncle* stiffly erect, about a foot long. *Panicle* about as long as the peduncle, with five or seven branches; racemes oblong or finally oblong-cylindrical, four to nine inches long, three inches in diameter when fully expanded; lower pedicels about half an inch long; bracts lanceolate acuminate, as long as the pedicels. *Perianth* pale red, an inch and a quarter long; tube globose at the base and very much constricted at the middle; segments oblong, a third or half as long as the tube. Longer *stamens* and style finally as long as the perianth. *Style* twice as long as the oblong ovary.—*J. G. Baker.*

A. Whole plant, *much reduced*. Fig. 1, a flower, cut open; 2, stamens, showing back and face; 3, pistil; 4, horizontal section of ovary:—*all magnified.*



M. S. & A. J. B. Woodbury, 1886.

TAB. 6863.

ALOE HETERACANTHA.

Native country unknown.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Benth. et Hook. f. Gen. Pl.* vol. iii. p. 776.)

ALOE *heteracantha*; caule brevissimo simplici, foliis 15–30 dense rosulatis lanceolatis pedibus obscure verticaliter lineatis parce irregulariter albo maculatis facie sæpe lineis 2 elevatis verticalibus percursis margine inermibus vel aculeis paucis inæqualibus deltoideis armatis, floribus racemoso-paniculatis, pedunculo valido ancipiti, racemis densis cylindricis, pedicellis flore 2–3-plo brevioribus, bracteis ovatis pedicello brevioribus, perianthio cylindrico splendide rubro tubo brevissimo, genitalibus perianthio requilongis.

A. heteracantha, Baker in *Journ. Linn. Soc.* vol. xviii. p. 161.

This is an Aloe which we have had for a long time at Kew, but have never before flowered, and of which the flowers have never been described. Its history is not clearly known, but it is believed to have been brought from the Jardin des Plantes at Paris many years ago by Mr. Cooper. It has been thought that it might be identical with the *Aloe inermis* of Forskahl, an inhabitant of Arabia Felix, but of this no specimens are known to exist, and the description is extremely incomplete. Mr. Brown tells me that it has also been flowered at Reigate in the open air by Mr. Cooper, and that when so grown the leaves are much smaller than in our plant, and strongly tinted with red-brown. Our plant was grown under a subtropical temperature, and the drawing was made in June, 1885.

DESCR. *Stem* simple, very short. *Leaves* fifteen to thirty in a dense rosette, ascending, lanceolate, half to one foot long, one and a half to two and a half inches broad low down, narrowed gradually to the concave apex, green or in exposure tinted with red-brown, obscurely vertically lineate towards the base, often with a few irregular small whitish spots, and often marked down the face with one or two faint raised vertical ribs, usually furnished with a few irregular spreading deltoid prickles on the margin. *Inflores-*

MARCH 1ST, 1886.

cence three feet high in the specimen drawn, consisting of three branches; main peduncle very stout, ancipitous, a foot long below the lowest branch; racemes dense, cylindrical, half a foot or a foot long, three inches in diameter; pedicels ascending, cernuous at the tip, the lower half or three-quarters of an inch long; bracts ovate, acute, shorter than the pedicels. *Perianth* cylindrical, an inch and a quarter or an inch and a half long; tube very short; outer segments bright red; inner whitish, with a red keel. *Stamens* as long as the perianth; anthers oblong, reddish-yellow. *Style* longer than the ampullæform ovary, reaching to the tip of the perianth-segments.—*J. G. Baker*.

Fig. 1, The whole plant, *much reduced*; 2, leaf, *natural size*; 3, raceme, *natural size*; 4, a single flower; 5, flower, with perianth-segments cut away; 6 and 7, stamens; 8, pistil; 9, ovary; 10, horizontal section of ovary:—*all more or less enlarged*.

TAB. 6981.

ALOE HILDEBRANDTII.

Native of East Tropical Africa.

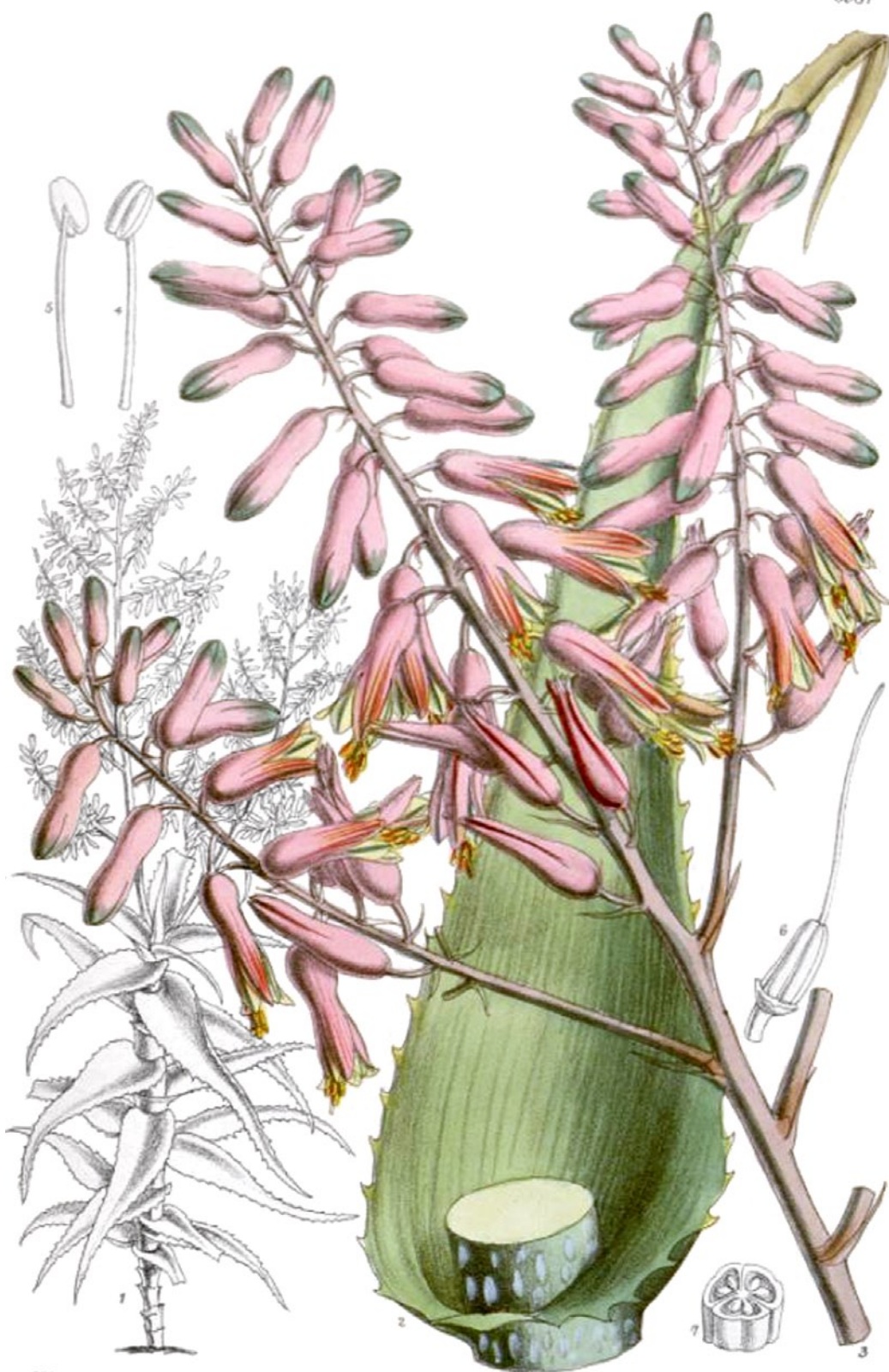
Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Benth. et Hook. f. Gen. Fl.* vol. iii. p. 776.)

ALOE Hildebrandtii; caudice erecto elongato simplici. foliis lanceolatis dissitis patulis parce maculatis dentibus marginalibus parvis deltoideis. floribus in paniculam amplam pedunculo brevi ancipiti ramis multis ascendentibus laxe racemosis dispositis, pedicellis brevibus, bracteis parvis lanceolatis, perianthii segmentis lineari-oblongis tube cylindrico vix longioribus, genitalibus breviter exsertis.

This very distinct new Aloe was discovered by the late Dr. Hildebrandt in the course of those adventurous explorations of East Tropical Africa which extended from 1872 to 1877, and added very materially to our knowledge of the botany of that part of the world. For horticultural purposes it is one of the most desirable of all the Aloes, from its compact growth and the unprecedented abundance of its bright-coloured flowers. Its nearest allies are *A. consobrina*, Salmdyck, and the little-known *A. spicata*, Haworth, of the latter of which there is a good figure in Bentley and Trimen's "Medicinal Plants," tab. 284. Dr. Hildebrandt's explorations extended from Abyssinia and Somali-land southward to the mountains of the interior opposite Zanzibar, and we do not know the exact country whence it came. Our drawing was made from a plant that flowered at Kew for the first time last summer, which was received in 1882 from the Botanic Garden of Berlin in 1882.

DESCR. Leafy stem simple, terete, erect, reaching a length of one and a half or two feet, and a diameter of half or three-quarters of an inch in our plant; internodes half or three-quarters of an inch long, conspicuously spotted with white. *Leaves* laxly disposed, spreading, lanceolate, six to ten inches long, one and a half or two inches broad at the



* For a detailed account of Dr. Hildebrandt's explorations reference may be made to a translation by Mr. Geo. Murray of a paper by Herr Kurtz, in Tyimen's "Journal of Botany" for 1879, p.86.

clasping base, tapering gradually to an acuminate point, concave on the face above the base, rounded on the back, glaucous green with a few small whiet spots, margined with small, ascending, deltoid teeth. *Peduncles* produced from the axils of the upper leaves, short, compresed, acutely angled. *Inflorescence* a lax panicle a foot and a half long, composed of ten or twelve laxly racemose ascending branches; pedicels about a quarter of an inch long; bracts small, laneeolate. *Perianth* cylindrical, under an inch long; segments linear-oblong, scarcely longer than the tube; tube and outer segments bright red; inner red-yellow, with a green keel. *Stamens* and *style* a little longer than the perianth; anthers small, oblong, yellow.—*J. G. Baker*.

Fig. 1, Whole plant, *much reduced*; 2, a leaf; 3, upper branches of the panicle, *both life-size*; 4, front view of stamen; 5, back view of stamen; 6, pistil, *all three enlarged*.

ALOE HUMILIS. SOFT-SPINED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

*Generic Character.**Cor.* erecta, ore patulo, fundo nectarifero. *Filam.* receptaculo inferta.*Specific Character and Synonyms.*

ALOE *humilis* (acaulis) foliis ambientibus, cæspitosis, affurgentibus, lato-fubulatis, plano convexis; spinis albis, mollibus, inermibus, undique erumpentibus; bracteis pedicellos subæquantibus; corolla cylindrica hexapetalopartita, ore patulo, reflexo. G.

ALOE *humilis*, acaulis, foliis undique inerme spinosis, adscendentibus, subulato-trigonis, floribus cylindricis. *Decand. Pl. Gr. liv. 7 n. 39.*

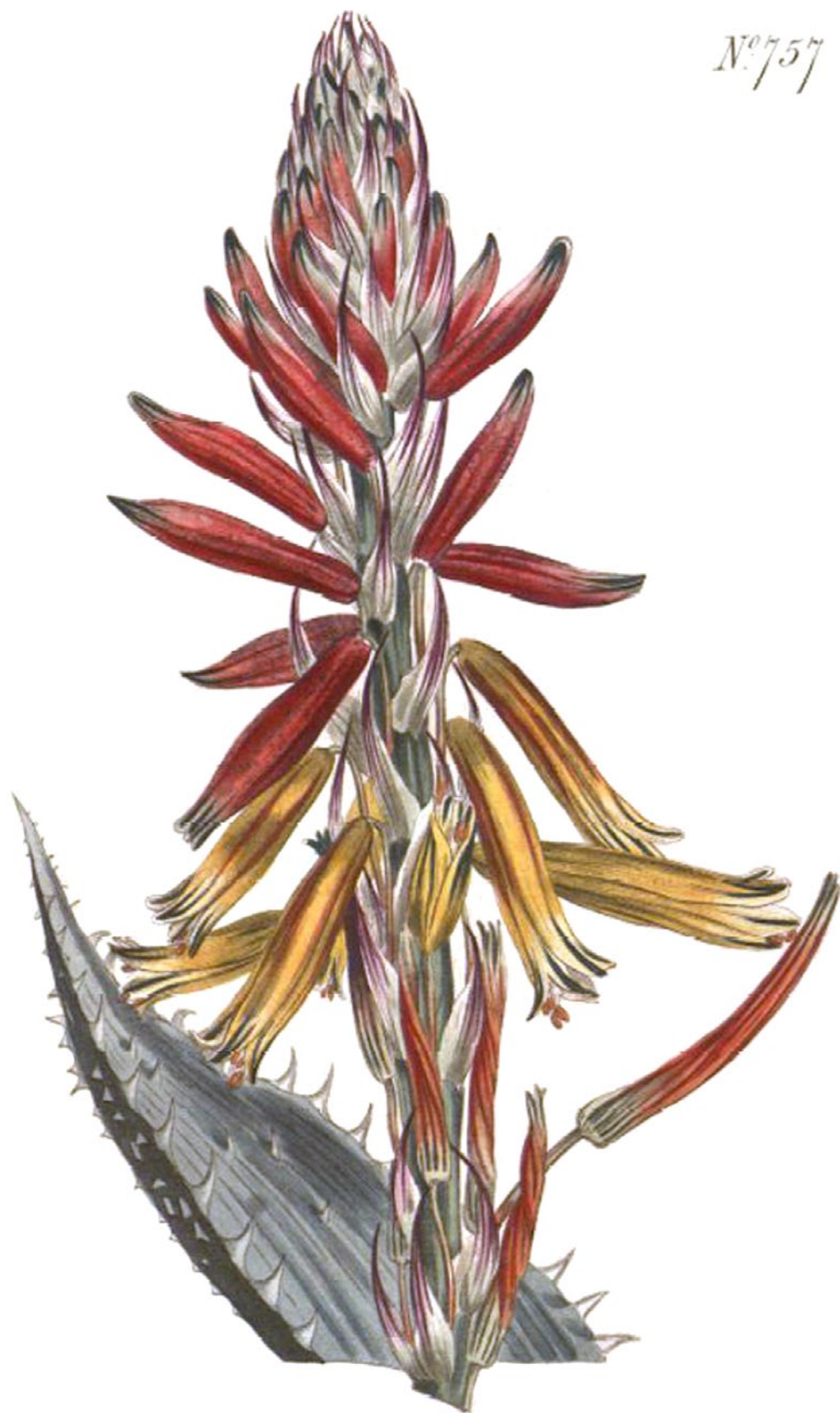
ALOE *humilis*. *Willd. Sp. Pl. v. 2. p. 187. Thunb. Diffn. 6. Prod. 61.*

ALOE *perfoliata* var. *humilis*. *Sp. Pl. 458. Hort. Kew. 1. 467. Mart. Mill. Dict.*

ALOE foliis erectis subulatis radicatis undique inerme spinosis. *Hort. Ciff. 131. Roy. Lugd. 24.*

ALOE *africana humilis*, spinis inermibus et verrucis obfita. *Comm. prel. 77. t. 26. rar. 46. t. 46. optime. Boerb. ind. alt. 2. 130. n. 23. Til. Hort. Pif. p. 7. t. 6. male.*

ALOE *africana* foliis glaucis margine et dorso superiori parti spinosis. *Weinm. Phyt. t. 73. a.*



Bot. Edwards del. Pub. by T. Curtis, St. Geo. Crescent July 11. 1804. F. Searson sculp.

DESC. *Stem.* none. *Leaves* furrounding the scape tuftwise, affurgent, and often slightly incurved upwards, broad-subulate, plano-convex, sometimes nearly trigonal, beset with white subcartilagineous softish spines; these at the edges are teethlike, regularly arranged, more numerous and perfect in shape, but in the other parts are often abortive and appearing

appearing like little white pustules. *Scape* central, upright, from half to two feet high, beset from the base with convolute, acuminate, membranous, white bractes, resembling the upper fertile ones. *Raceme* spiked, longish, not very thickset. *Pedicles* about the length of the bracte and corolla, upright. *Corolla* pendulous cylindrical, parted to the base, three outer segments narrowest and more succulent, inner ones nearly membranous, all patuloufly reflected at the mouth. *Filaments* flightly unequal, nearly the length of corolla, sub-affurgent. *Stigma* simple.

A native of the Cape of Good Hope. An old inhabitant of our gardens. Requires the same treatment as the rest of the genus.

Our drawing was taken at Messrs. GRIMWOOD and WYKES's, Kenfington. G.

ALOE-HUMILIS (β). NARROW-LEAVED
STEMLESS ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—Vide N^{um}. 765.

Specific Character and Synonyms.

ALOE *humilis*. Vid. N^{um}. 757.

(β) floribus nonnihil splendidioribus, majoribus atque crebrioribus; foliis angustioribus, magis glaucinis, subascendentibus incurvatis. G.

ALOE *humilis* (β) incurva. Haworth on ALOE, in Linn. Trans, vol. 7. p. 15.

Our drawing of this beautiful variety of ALOE was taken at the Nurseries of Messrs. MALCOLMS, at Kensington. Probably raised in our own gardens from the seeds of (α). G.



TAB. 7386.

ALOE KIRKII.

Native of Zanzibar.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

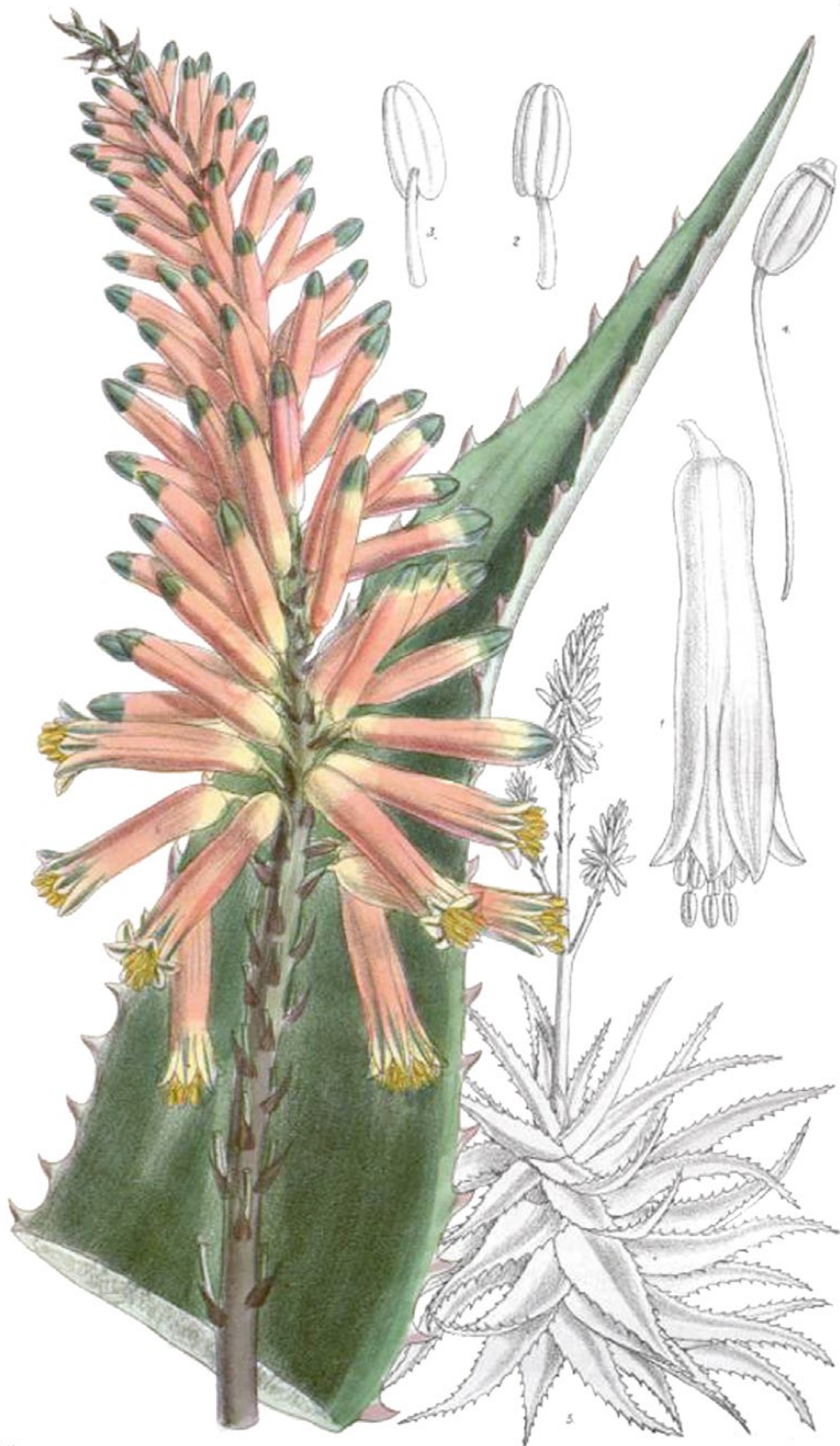
Genus ALOE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 776.)

ALOE, *Kirkii*; caudice brevi valido, foliis 30–40 dense rosulatis lanceolatis subpedalibus patulis viridibus brevibus immaculatis, aculeis marginalibus magnis patulis deltoideis, pedunculo stricto erecto trifurcato, racemis densis oblongo-cylindricis, pedicellis brevibus, superioribus ascendentibus, inferioribus cernuis, bracteis ovatis parvis, perianthio cylindrico rubro-luteo apice viridulo, lobis lingulatis tubo brevioribus, staminibus brevissime exsertis.

This is another new *Aloe*, sent from Zanzibar by Sir John Kirk to the Royal Gardens, Kew. It was received from him in 1881, and flowered for the first time in the Succulent House in January, 1894. It belongs to the group of true Aloes with a very short caudex, and dense rosette of unspotted leaves, of which *A. brevifolia*, *Serra*, *glauca*, and *heteracantha* are the best known garden representatives. Its nearest ally is *A. Hildebrandtii*, Baker in *Bot. Mag.* Tab. 6981, which also is a native of South-East tropical Africa.

Descr.—Caudex short, stout, erect. *Leaves* thirty to forty in a dense rosette, spreading, lanceolate, nearly a foot long, two inches broad above the dilated base, tapering gradually to the point, a quarter of an inch thick in the middle, bright green, without any spots or dots, very smooth on both surfaces; marginal teeth large, deltoid, spreading, scarcely tipped with brown in the cultivated plant. *Inflorescence* two feet long, with three branches; peduncle stiffly erect, branched at the middle; racemes dense, oblong-cylindrical, the end one nearly a foot long; pedicels short, the upper ascending, the lower cernuous;

NOVEMBER 1ST, 1894.



bracts very small, ovate. *Perianth* cylindrical, above an inch long, reddish-yellow, tipped with brown; lobes lingu- late, rather shorter than the tube. *Stamens* finally very shortly exserted—*J. G. Baker*.

Fig. 1, A flower; 2, an anther, front view; 3, an anther, back view; 4, ovary and style, *all enlarged*; 5, whole plant *much reduced*.

TAB. 7624.

ALOE LEPTOPHYLLA.

Native of Cape Colony.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 776.)

ALOE leptophylla; caudice simplici, foliis dense rosulatis recurvatis laneolatis acuminatis pro genere tenuibus viridibus punctis et lineis albidis copiosis decoratis dentibus marginalibus crebris magnis deltoideis, pedunculo simplici stricto erecto foliis longiore, racemo congesto capitato, pedicellis longis, bracteis parvis lanceolato-deltoideis, perianthio aurantiaco tubo subcylindrico supra ovarium constricto, lobis linearibus tubo brevioribus apice viridibus, staminibus styloque breviter exsertis.

A. leptophylla, N. E. Brown, ex Baker in *Journ. Linn. Soc.* vol. xviii. p. 165; *Journ. Bot.* 1889, p. 44; *Fl. Cap.* vol. vi. p. 313.

This fine *Aloe* was collected by Mr. Thomas Cooper in his travels in South Africa, about the year 1860, in the province of Worcester, not far from the town of Worcester, which is about eight hundred feet above sea-level. It is nearly allied to *A. latifolia*, Haworth, but the leaves are thinner in texture than in any other species of the group *Maculatæ*, which is conspicuous for its copiously spotted leaves. The Kew plant, from which our drawing was made, was purchased from Mr. Cooper in 1897, and flowered in the Succulent House in April, 1898.

Descr.—*Stem* reaching a length of half a foot, and a diameter of two inches below the rosette of leaves. *Leaves* twelve to twenty in a rosette, recurved, lanceolate, acuminate, nine to twelve inches long, three or four inches broad, green, or tinged with purple, copiously spotted and striped with white, thinner in texture than in any of its allies; marginal teeth large, close, deltoid. *Peduncle* simple, stiffly erect, longer than the leaves. *Raceme* dense, capitate; pedicels an inch or more long; bracts small, lanceolate, deltoid. *Perianth* sub-cylindrical, an inch and a half long, bright orange-yellow, tipped with green; tube constricted above the ovary; lobes linear, shorter than the tube. *Stamens* and *style* slightly exerted.—*J. G. Baker.*

Fig 1, A flower; 2, front view of stamen; 3, back view of stamen; 4, pistil. all enlarged; 5, whole plant, much reduced.

NOVEMBER 1ST, 1898.



N^o 979



[979]

ALOE LINGUA (α). NARROW-LEAVED
TONGUE ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—Vide N^{um}. 765.

Specific Character and Synonyms.

ALOE *Lingua*; (*acaulis, curviflora*) foliis distichis, basi imbricato-conduplicantibus, linguaformibus, punctulis instar aranæ cuticulæ pruinatis, variegatis; corolla subampullacea, laciniis breviter coalitis. *G. Vid. supra* N^{um}. 838, *ubi adjicienda synonyma sequentia*

ALOE africana flore rubro, folio maculis ab utraque parte notato. *Knorr Theſ. Rei Herb. v. 3. A. t. 14. Comm. Hort. Amſt. 2. 15. t. 8.*

ALOE africana maculata flore rubro, fecunda species. *Weinm. Phyt. Icon. t. 57.*

ALOE africana foliis linguam vitulinam exprimentibus. *Sabbat. Hort. Rom. 6. t. 71. (ALOE a lingua di vitello).*

(β) foliis latioribus obscurius variegatis. *G.*

ALOE *obliqua*. *Jacq. Hort. Schænb. 4. t.*

ALOE *nigricans*. *Haworth Linn. Transf. 7. 23.*

For our observations on this species see above, No. 838. Why the flowers are described as “erecti” in most books, we are at a loss to say. *G.*

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Specific Character and Synonyms.

ALOE *Lingua; (e)caudicata; flores mediæ magnitudinis, curvati, penduli;*) foliis coriaceo-crassis, bifariis; divaricatim reclinatis, mutuo incumbentibus, linguiformi-loratis (*modo subattenuatis*), cartilagine denticulata (*nunc parciſſimne vel et omnino non*) marginatis, deorsum convoluto-equantibus; caule ramoſo, laxius racemoſo; pedicellis floribusque diſſuſe pendulis; corolla ventricoſo-tubuloſa, ſuſſum ſexdiviſa ſubtrigone clauſa, ore breviffime patula; ſtaminibus incluſis. G.

ALOE *Lingua*. Thunb. *Diff.* p. 8. n. 11. *Prod.* 61. *Hort. Kew.*
1. 496. *Haworth in Linn. Transf.* 7. 13. *Willd. Sp. Pl.* 2.
189.

A. linguæformis. Linn. *Suppl.* 206. *Mill. Dict. ed. 8. n. 13.*
Decand. *Pl. Gr.* 62.

A. disticha. (α) Linn. *Sp. Pl. ed. 2. t. 459.*

(α .) foliis minoribus tuberculis margaritaceis dense et confluent¹⁵er puftulatis. G. Fig. *integra in tab.*

A. intermedia. *Haworth Linn. Transf.* 7. 12; (*excl. Boerh.*)

(β.) foliis majoribus (*modo retufis*), guttulis albicantibus conspersis vel et istis oblitteratis. *G. Folia separatim exhibita in tab. fig. 2, 3, 4, 5.*

A. linguæformis. Decand. l. c. tab. 62.

A. *Lingua*; angustifolia. Hort. Kew. 1. 469.

A. africana flore rubro foliis maculis albicantibus ab utraque parte notato. *Com. Hort. Am.* 2. 15. *tab.* 8. *Knorr, Thef.* v. 3. *A. tab.* 14.

(γ .) foliis partim verrucosis. G.

A. ling. verrucosa. Decand. l. c. tab. 62. alt.

A. africana foliis planis conjugatis verrucosis caule et flore corallii colore. *Mart. Cent. Dec.* I. I.

(δ .) foliis subattenuatis, subcarinatis, verrucosis. G.

A. Lingua; angulata. *Haworth. l. c.*

A. acuminata. Lam. *Dict. Encyc.* 1. 90. n. 21.

A. africana flore rubro folio triangulari et verrucis ab utraque parte albicantibus notato. *Com. Hort Amst.* p. 17. fig. 9.

(ε.) foliis latioribus, brevioribus, glabris; corolla obefiore. G.

A. *Lingua*. β . *crassifolia*. Hort. Kew. 1. 469. Willd. l. c. Nobis
supra No. 838.

A. nigricans. Haworth l. c.

A. obliqua. Jacq. Hort. Schoenb. v. 4. tab. 37.



Native of the Cape of Good Hope. One of the commonest ornaments of our greenhouses and parlour windows. Cultivated by MILLER. Blooms most part of the summer. We have erroneously given, in No. 979, a variety of *maculata* for a variety of this species. Propagated with the greatest facility by offsets. We are obliged to Mr. HAWORTH for the specimens of all the varieties here engraved. G.

NOTE.

In No. 979, we have by mistake published for a variety of ALOE *Lingua*, a plant which is more apparently a variety of the A. *maculata* of No. 765. So that the whole of that article should be expunged and the following substituted in its place. G,

ALOE MACULATA. β . OBLIQUA. SHORT-LEAVED
MARBLED ALOE.

ALOE *maculata*; (*folioso-caudescens; flores mediæ magnitudinis, curvati, penduli;*) foliis coriaceo-crassis, obliquatim vel subspiraliter ambientibus, vel longioribus atque subacinaciformi-acuminatis vel brevioribus atque linguiformi-loratis, ex atro-viridibus lituris candidis marmoratim pictis, glabris (*ad lentem punctulis minutissimis impressis*), subnitentibus, modo subtus vel et utrinque carinatis. Inflorescentia omnino *Linguae*. G.

ALOE *maculata*. Thunb. Diff. n. 10. Prod. 61. Hort. Kew. 1, 469. Willd. Sp. Pl. 2. 189 Nobis supra No. 765.

(α .) foliis subacinaciformi-elongatis. G.

A. *maculata*. pulchra. Hort. l. c. Mill. Ic. 195. tab. 192. Nobis. l. c.

A. *pulchra*. Haworth. l. c. p. 14. n. 25. Jacq. Hort. Schoenb. v. 4. tab. 36.

A. *obliqua*. Decand. Pl. Gr. tab. 91.

(β .) foliis brevioribus linguiformi-oblongatis. G.

A. *maculata*; *obliqua*. Hort. Kew. l. c. Willd l. c.

A. *Lingua*. α . Nobis supra No. 979.

A. *obliqua*. Haworth. l. c.

For further account of the species, see No. 765. G.

ALOE LINGUA, *var. β*. CRASSIFOLIA. THICK-
LEAVED TONGUE ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vide N^{um.} 765.*

Specific Character and Synonyms.

ALOE *Lingua* (*acaulis, curviflora*) foliis distichis imbricato-conduplicantibus, linguæformibus, punctulis densissimis pruinantibus ad instar aranæ cutis, obscure variegatis; corollæ laciniis paululum coalitis. *G.*

ALOE *Lingua*. *Thunb. Diff. Prod.* 61. *Hort. Kew.* 1. 469.
Willd. Sp. Pl. 2, 189.

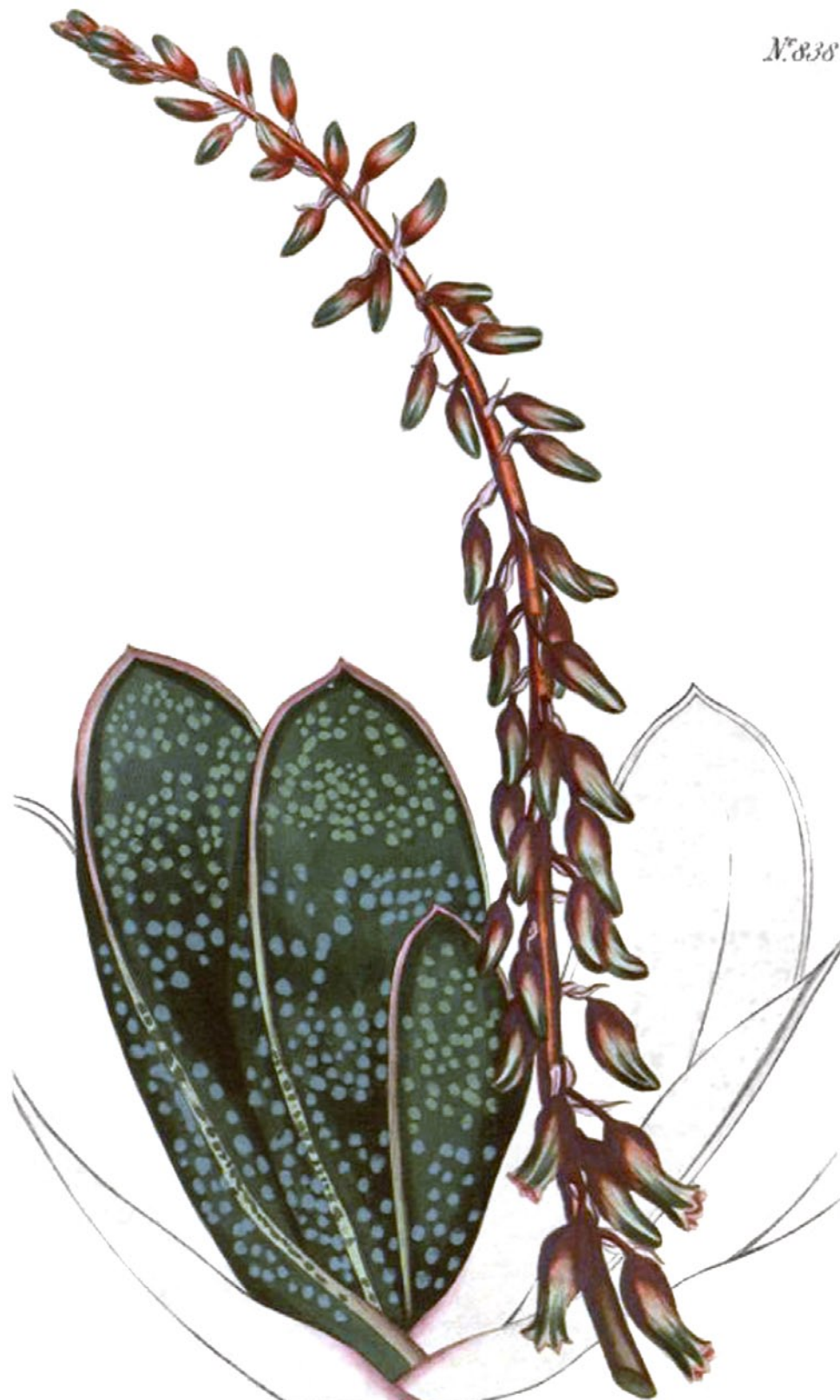
ALOE *linguæformis*. *Suppl.* 206. *Decand. Pl. Gr.* 68.

ALOE *nigricans*. *Haworth on Aloe, Linn. Transf.* 7. 13.

ALOE *disticha*. *Sp. Pl.* 459.

ALOE foliis foliis ensiformibus distichis patulis. *Hort. Cliff.*
132. *Hort. Ups.* 86. *Roy. Lugdb.* 86.

β. crassifolia; foliis latioribus brevioribus. *Hort. Kew. l. c.*



Edwards del. Pub. by T. Curtis, St. Geo. Crescent May 11 1805. P. Sanfey.

A Cape species, some of the varieties of which are said by THUNBERG to grow on the top of Roodefsand mountains near the waterfall. We have never yet seen any figure of our present variety, which was cultivated by MILLER in 1731.

Our drawing was taken at Mr. MALCOLM'S Nursery, Kenfington. Now common. We cannot agree with Mr. HAWORTH in making this a distinct species; not finding character sufficient to distinguish it by; his character of "*margines integerrimæ*," is not by any means constant. The outer surface of the leaves when carefully examined will be found to be dotted or chagreened in the manner of a spider's skin; they are also curiously conduplicate at their bases. This plant is propagated by offsets, is a free blower, and of easy culture. *G.*

TAB. 7448.

ALOE LUNTII.

Native of Southern Arabia.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 776.)

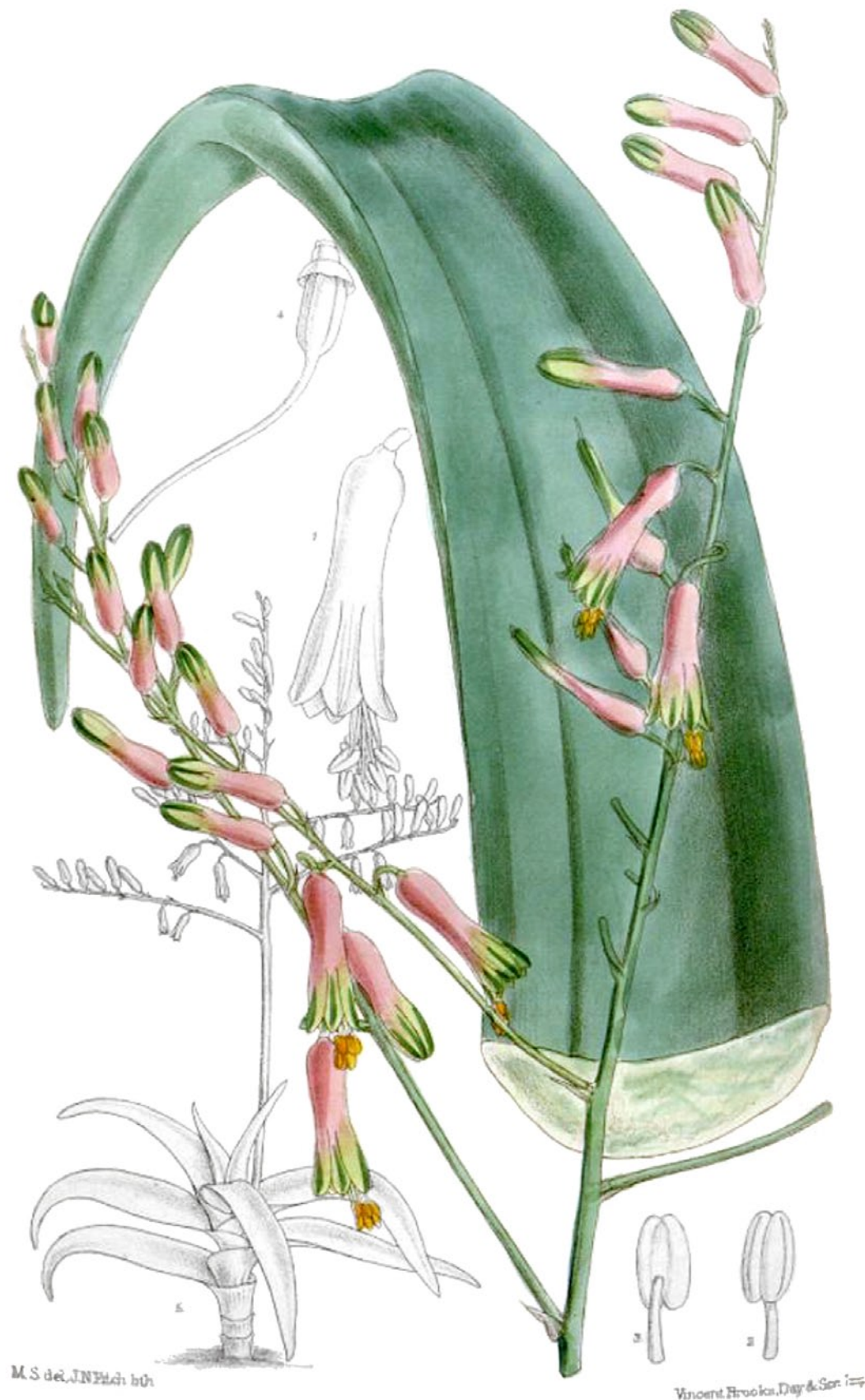
ALOE *Luntii*; breviter caulescens, foliis densis primum rosulatis distichis demum subrosulatis ensiformibus recurvatis pallide viridibus immaculatis supra basin facie canaliculatis aculeis marginalibus obsoletis, pedunculo stricto erecto foliis longiore, racemis laxis paniculatis lateralibus patulis, bracteis minutis, pedicellis brevibus apice articulatis superioribus ascendentibus inferioribus cernuis, perianthii cylindrici tubo elongato rubello, lobis lineari-oblongis erectis tubo brevioribus, staminibus omnibus exsertis, antheris oblongis parvis, polline rubro.

A. *Luntii*, Baker in *Kew Bullet.* 1894, p. 342.

This very distinct new Aloe was discovered by Mr. W. Lunt, now of the Trinidad Botanic Garden, when he was attached as botanical collector to the expedition organized by J. Theodore Bent, Esq., in the winter of 1893–4, to explore the ruined cities of the province of Hadramaut, in Southern Arabia. This district had never been before explored botanically, and although the time of the year was unfavourable, about thirty new plants were discovered, of which three proved to be new genera. The present plant was found on the hills above Dobiabah, at an elevation of three thousand feet above sea-level. Both living and dried specimens were brought home, and one of the former flowered in the Royal Gardens at Kew last November. The leaves have no marginal prickles, and the flowers have an unusually long tube, resembling that of a *Gasteria*, but not dilated into a ball at the base.

Descr.—Shortly caulescent. *Leaves* seven or eight in a dense rosette at the top of the stem, at first distichous, ensiform, a foot long, two inches broad at the base, narrowed gradually to the point, pale green on both sides, without any spots, stripes or marginal prickles, deeply channelled down the face in the upper half. *Peduncle* stiffly erect, longer than the leaves. *Panicle* of four or five

DECEMBER 1ST, 1895.



M.S. del. J.N. Pich. lith.

Vincent. Brooks, Day & Son. 1895

long lax racemes, the side ones spreading horizontally; bracts very small; pedicels short, articulated at the apex, the upper ones ascending, the lower cernuous. *Perianth* under an inch long; tube cylindrical, pale red; lobes linear-oblong, erect, shorter than the tube. *Stamens* all exerted; anthers small, oblong; pollen bright red.—*J. G. Baker.*

Fig. 1, An entire flower; 2, front view of anther; 3, back view of anther; 4, pistil:—*All enlarged*; 5, whole plant *much reduced*.

TAB. 6580.

ALOE MACRACANTHA.

Native of the Cape Colony.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Baker in Journ. Linn. Soc. vol. xviii. p. 148.*)

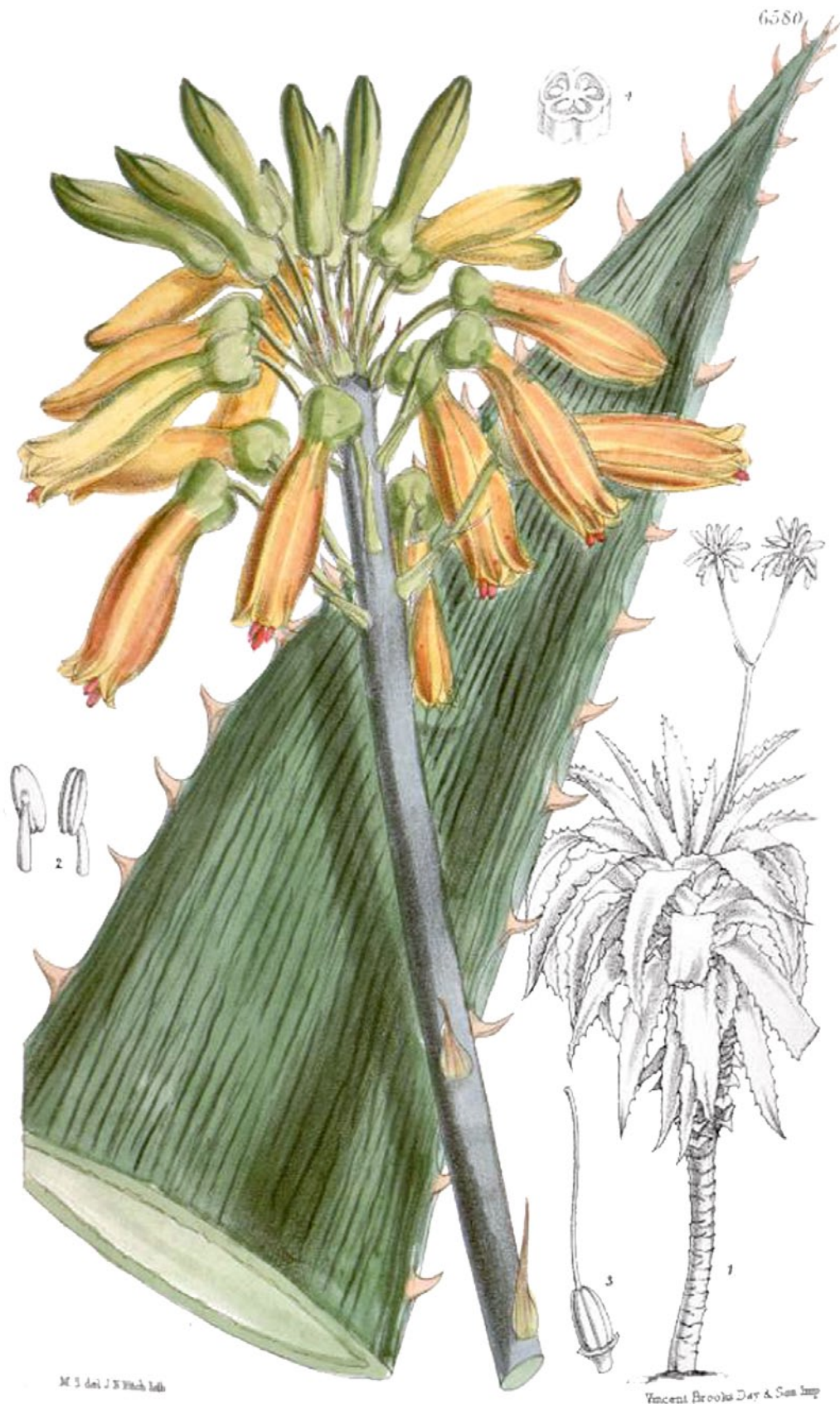
ALOE macracantha; caudice elongato simplici, foliis 20–30 dense rosulatis lanceolatis pedalibus et ultra 3–4 poll. latis viridibus lineis et maculis albidis confluentibus copiosis decoratis margine aculeis magnis patulis corneis deltoideo-cuspidatis præditis, pedunculo simplici vel furcato, floribus dense corymbosis, pedicellis erecto-patentibus 1–1½ poll. longis, bracteis lanceolatis pedicello brevioribus, perianthii splendide luteo-rubri tubo supra basin constricto, segmentis tubo duplo brevioribus, genitalibus perianthio sequilongis.

A. macracantha, *Baker in Journ. Linn. Soc. vol. xviii. p. 167.*

This is unmistakably the finest of all the spotted Aloes. Its alliance is with *A. Saponaria* and *A. latifolia*, from which it is marked at a glance by its longer caudex, broader leaves, and larger flowers. It is one of the most interesting of the many novelties in succulent plants, discovered by Mr. Thomas Cooper, of Reigate, in his travels through the eastern provinces of Cape Colony, from 1858 to 1862, on behalf of Mr. Wilson Saunders and the Royal Horticultural Society. We have had it growing at Kew to my knowledge since 1870, and it is now widely spread in collections; but so far as I am aware, it has never flowered in cultivation till now. Our drawing was made from a plant that flowered in the Cactus-house at Kew in March of this present year.

DESCR. *Caudex* simple, reaching a length of two or three feet, and a diameter of two or three inches. *Leaves* twenty to thirty in a dense rosette, lanceolate, twelve or fifteen inches long, three or four inches broad below the middle, narrowed gradually from the middle to the tip, one-sixth of an inch thick in the centre, nearly flat on the face, bright

SEPTEMBER 1ST, 1881.

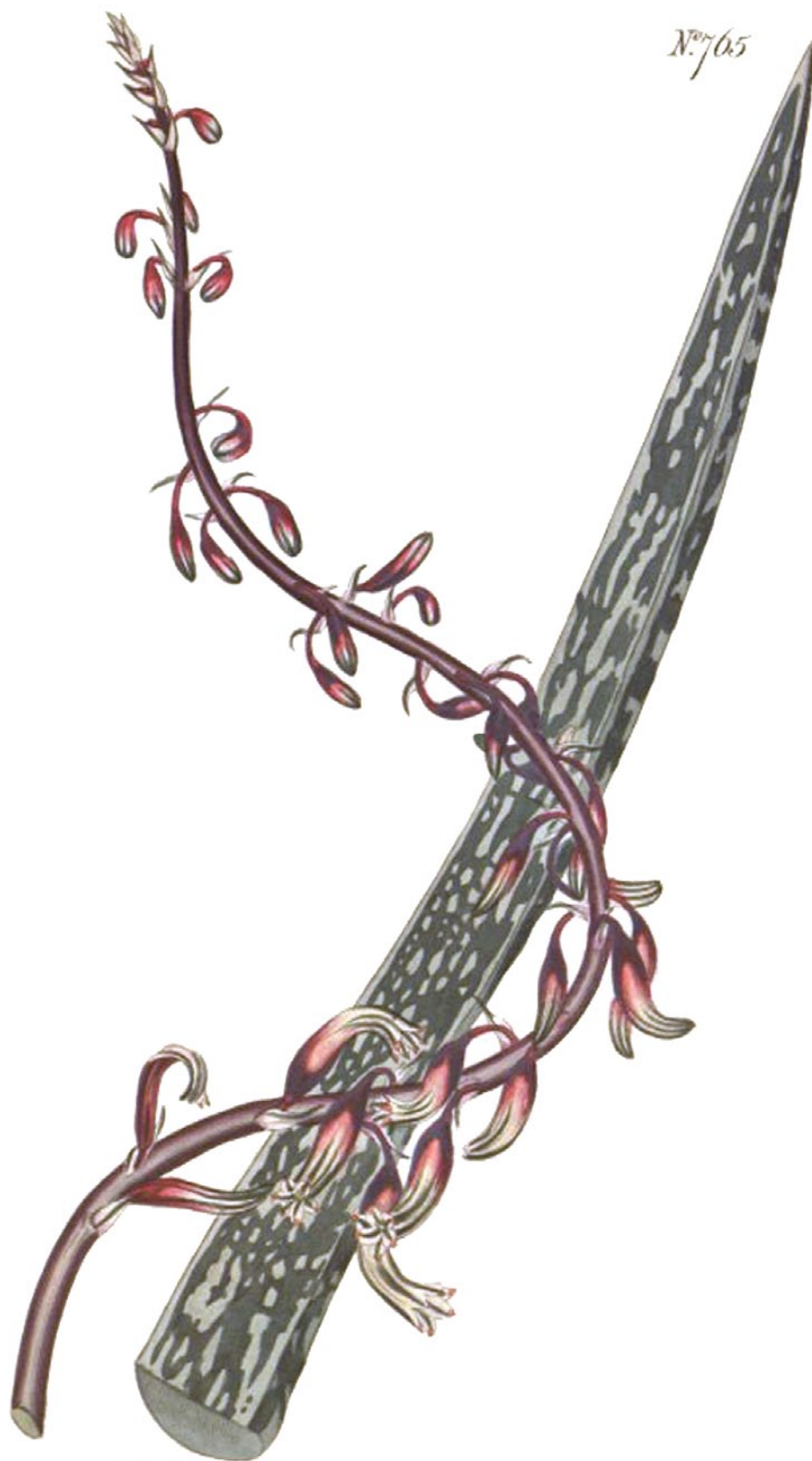


M. S. del. J. H. Nash. lith.

Vincent Brooks Day & Son Imp.

green, with copious lines and oblong confluent whitish blotches, much paler on the convex back, furnished on the margin with large deltoid-cuspidate spreading prickles which are brown and horny in the upper half. *Peduncle* flattened, purplish, glaucous, simple or forked, above a foot long. *Inflorescence* a dense corymb about four inches in diameter; pedicels erecto-patent, an inch or an inch and a half long; bracts lanceolate, shorter than the pedicels. *Perianth* bright yellow, with a tinge of red, nearly two inches long; tube distinctly constricted above the globose base; segments oblong-lanceolate, half as long as the tube. *Stamens* and *style* just reaching to the tip of the perianth-segments; pollen bright red.—*J. G. Baker.*

Fig. 1, Whole plant,—*much reduced*; 2, front and back view of anthers,—*magnified*; 3, pistil,—*natural size*.



Ed Edwards del. Pub. by T. Curtis, St. Geo. Crescent Aug. 1. 1806. F. Lindem. sculp.

[765]

ALOE MACULATA. SPOTTED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vide Num.* 756.

Specific Character and Synonyms.

ALOE *maculata* (*subacaulis*) foliis inæqualiter trigonis, maculatis, junioribus subdistichis, longe acuminatis; scapo elongato, sursum ramofo; floribus racemosis, pedicellos parum excedentibus; corolla curvata, deorsum ventricosa, laciniis externis longius unitis; organis inclusis. G.

ALOE *maculata*. Thunb. Diff. 10. Hort. Kew. 1. 469. Mart. Mill. Dict. Willd. Sp. Pl.

ALOE *maculata* (pulchra). Mill. f. 195. t. 292.

ALOE *obliqua*. Decand. Pl. Gr. 1. 16. t. 91.

Stem very short, generally covered with leaves, the lower of which are ambient, the younger commonly distich and far acuminate; all variegated or spotted with white, quite smooth, polished, with entire even edges. Scape tall, slender, branched upwards. Flowers growing in a loose pendulous raceme, rather longer than the pedicles, as these are than the bractes. Corolla cylindrical, ventricose downwards, curved towards the middle; the three outer segments are connate as far as the curve; inner thinner. Stigma simple. Filaments enclosed in the slender part of the corolla. Seeds flat, membranously alate.

Cultivated here by MILLER. Found at the Cape of Good Hope by THUNBERG, growing wild in the Houtniquas mountains; but often cultivated at Cape Town.

To be treated like the other Cape Aloes. Blooms freely, and is easily propagated by offsets; very common. G.

ALOE MARGARITIFERA (v. *media*). MIDDLE.
SIZED PEARL-LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—Vide Num. 765.

Specific Character and Synonyms.

ALOE *margaritifera* (*acaulis*; *parviflora*) foliis radicalibus, cuspidato-trigonis, confertis, sparsim circumstantibus, verrucis albescentibus obtusis inermibus undique confersis; scapo alto, ramofo; corolla ventricoso-cylindrica, bilabiata, laciniis longius coalitis; stylo brevi.
G.

ALOE *margaritifera* (v. *media*). Gertn. Sem. 67. t. 17. Hort. Kew. 1. p. 468. Willd. Sp. Pl. 2. 188. Haworth Transf. Linn. Soc. 7. 11.

ALOE *pumila margaritifera*. β. Linn. Sp. 460.

ALOE *pumila*. Thunb. Diff. 7. 8. Prod. 61.

ALOE *africana margaritifera* folio undique verrucis numerosis. Bradl, Succ. 3. p. 1. t. 21.

ALOE *africana* folio in summitate triangulari margaritifero flore subviridi. Comm. Hort. Amst. 2. p. 19. t. 20. et 2. p. 21. t. 11. Boerb. Ind. Alt. 2. 130. n. 29. Aubr. pict. Hort. Paris. Dill, Elth, 19. t. 16. f. 17.

A native of the Cape of Good Hope; introduced into our gardens by BRADLEY in 1725; is a plant of easy cultivation and propagated by seeds and offets. There are four varieties according to Mr. HAWORTH, while DECANDOLLE and others enumerate only three; their differences consist chiefly



chiefly in stature and in the greater or less number, as well as regularity, of the pearl-like warts that beset the leaves, which are many, from one to six inches in length, all radical and sparsely ambient round the branched scape, which is from two to three feet high with somewhat whirled upright branches. The flowers are of the smaller size, of a dullish herbaceous colour, and arranged in a loose raceme; the segments of the corolla far-concrete and reflectedly patent upwards; three outer-ones flat, inner ones subchannelled at their summit; stamens unequal; stigma simple. DECANDOLLE has figured the smallest variety only. *G.*

ALOE MARGARITIFERA (γ); MINIMA. LEAST
PEARL-ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vide N^{um.} 1352.*

Specific Character and Synonyms.

ALOE *margaritifera*; (*ecaudicata*; *flores e minoribus, erecti, bilabiati*;) foliis plurimis, radicalibus, aggregatim ambientibus, varie patentibus, rigidis, pulvinato-craffis, subulato-lanceolatis, gibbis, bullulis cartilagineis margaritaceo-candicantibus undique asperfis, carinato-cuspidatis; caule firmulo, ramofo; racemo erecto laxius multifloro; bracteis ovato-acutis, subundulatis, brevibus; pedicellis corolla quinquies brevioribus subnullifve; corolla erecto-divergente, e deorsum ventricosiore tubulose coarctata, fexftriata, ad quartam circiter bilabiato-foluta; laciniis superioribus erectioribus explicatioribus imbricato-convergentibus media latiore, infimarum lateralibus convolutis angustatis recurvato-varicatis; staminibus tubo inclusis; stylo craffo brevi, apiculo stigmatoso trilobulato-depresso. G.

ALOE *margaritifera*. Hort. Kew. 1. 468. Gærtn. Sem. 1. 67. t. 17. f. 5. Mart. Mill. Dict. Haworth Linn. Transf. 7. 11. n. 19. Decand Pl. Gr. fol. 57. Willd. Sp. Pl. 2. 188. Supra No. 815. Hort. Kew. ed. 2. v. 2. 301.

ALOE *pumila*. Thunb. Diff. n. 8. Prod. 61.

ALOE *pumila*. *margaritifera*. Linn. Sp. Pl. ed. 2. 1. 460.

A. foliis ovato-subulatis acuminatis tuberculis cartilagineis, undique asperfis. Mill. Dict. ed. 7. n. 14.

(α .) *major*.

A. *africana* folio in summitate triangulari *margaritifera* flore subviridi. Comm. Hort. Amst. 2. 19. tab. 10.

A. *africana* *margaritifera* foliis undique verrucis numerosissimis. Bradl. Succ. 3. p. 1. t. 21.

(β .) *minor*,



(β .) *minor*. *Supra* No. 815. *Decand. l. c. cum tab.*

A. africana margaritifera minor. *Comm. Hort.* 2. 21. *t.* 11.
Dill. Hort. Elth. 19. *t.* 16. *f.* 17.

(γ .) *minima*. *Supra* No. 1360.

A. africana margaritifera minima. *Dill. Hort. Elth.* 20. *t.* 16.
f. 18. *Com. Præl. p.* 43.

We refer to No. 815 for a general account of the species. To this we have nothing to add, but that for *media*, *minor* should be substituted as the subspecific distinction, and in the last line but one of the second page for “smallest” “second” is to be read. We had the present specimen from Mr. HAWORTH’s collection. *G.*

TAB 8484

ALOE MARLOTHII.

South Africa.

LILIACEAE. Tribe ALOINEAE.

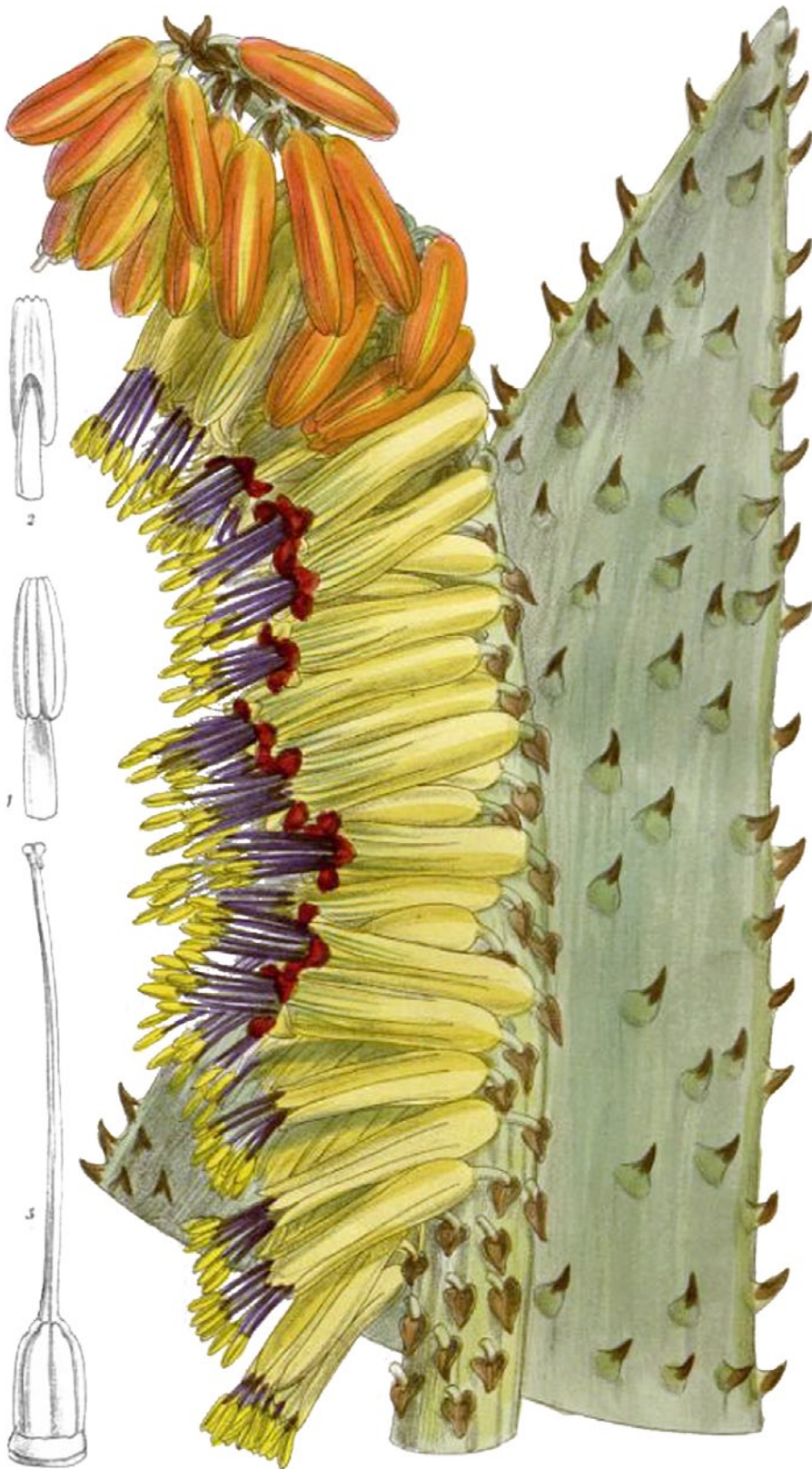
ALOE, Linn.; Benth. et Hook. f. Gen. Plant. vol. iii. p. 476.

Aloe Marlothii, Berger in *Engl. Jahrb.* vol. xxxviii p. 87; et in *Engl. Pflanzenr. Liliac. Aloin.* p. 312, fig. 133; Wood, *Natal Plants*, vol. vi. tt. 579, 580; species *A. Galpini*, Baker, quam maxime affinis sed foliis subtus spinoso-tuberculatis et floribus secundis luteis nec rubri, pauloque longioribus differt.

Frutex succulentus, caudice valido simplici rosulam foliorum ad 1 m. usque diametientem suffuscente, inferne densiuscule foliis exsiccatis persistentibus reflexis vestito. Folia conferta, 4–5 dm. tonga, 15–17 cm. lata, ovato-lanceolata vel lanceolata, acuminata, margine aculeis conicis 0.5–1.5 cm. remotis armata, supra concaviuscula, apicem versus subcanaliculata, parte inferiore sparse spinoso-tuberculata vel omnino inermia, subtus convexa, subcarinata ubique spinoso-tuberculata et secus carinam tuberculis 1-serialibus notata vel nonnunquam subinermia, utrinque perglauca; aculeae apice brunneae. *Pedunculi* erecti, fere metrales repatite dichotome ramosi subcandelabrifformesque, subpurpurascens; rami subhorizontaliter patentes, apice leviter sursum recurvi, 1.5 cm. crassi. *Flores* secundi, omnes sursum spectantes simulae leviter deflexi; bracteae reflexae, 6–7 mm. longae, ovatae, acutae, submembranaceae, pallide brunneae; pedicelli 4–6 mm. longi, validi, recurvi, virides. *Perianthium* 3.3 cm. longum, subcylindricum, versus apicem leviter dilatatum, segmentis apice rotundatis vix patentibus, extra luteum, superne viridi-striatum, interioribus 3 apice brunnis. *Stamina* 1.2–1.8 cm. ultra perianthium exserta; filamentorum parte exserta atro-violacea, parte inclusa pallide lutea; antherae aurantiacae. *Stylus* exsertus, pallide luteus, apice fuscus.—*A. supralaevis*, β *Hanburii*, Baker in Dyer, *Fl Cap.* vol. vi. p. 827; nequaquam *A. supralaevis*, Haw.—N. E. BROWN.

The fine Aloe here figured was discovered by Dr. R. Marloth first at Lobatsi in Bechuanaland; later near Ladysmith in Natal; still later on the Klip River Mountains near Johannesburg in the Transvaal. Transvaal specimens flowered first under cultivation in the Grahamstown Botanic Garden in July 1908. A plant sent by Dr. Marloth in 1905 from the Klip River locality to Sir Thomas Hanbury, at La Mortola, flowered there in April 1912 and provided the material for our illustration. The species, however, had already reached Europe; the plant described by Mr. Baker

MARCH, 1913



as *A. supralaevis*, β *Hanburii*, from European cultivated specimens, cannot be distinguished from that figured by Mr. Medley Wood as *A. Marlothii*, and Mr. Medley Wood's Natal plant is identical with the Transvaal one described by Mr. Berger. As Wood remarks, *A. Marlothii* had, until Berger defined it, been confused in South Africa with *A. ferox*, Mill., figured at t. 1975 of this work, and it is possible that there, as in Europe, it may have been confounded with species other than *A. ferox*, which have themselves been misunderstood. This confusion cannot be unravelled here; Mr. Berger's species is, however, a very distinct one which, while approaching *A. ferox* as regards the colour of its flowers, is in other respects more nearly allied to *A. Galpini*, Baker, in which the flowers are red.

DESCRIPTION.—*Shrub*, succulent; stem stout, simple, with a terminal rosette, over 3 ft. wide, of about 30 fleshy leaves, and clothed below with the dried remains of pendent shrivelled ones. *Leaves* close-set, $1\frac{1}{2}$ – $1\frac{3}{4}$ ft. long, 6– $6\frac{1}{2}$ in. wide, ovate-lanceolate or lanceolate, acuminate, armed on the margin with conical thorns $\frac{1}{4}$ – $\frac{1}{2}$ in. apart, slightly concave above, more distinctly channelled towards the tip, convex, slightly keeled below, very glaucous on both faces, above sparingly spinescent on the lower half, more closely and uniformly spinescent throughout on the back, but sometimes quite unarmed above and only sparingly spinescent on the back; thorns brown-tipped. *Peduncles* erect, over 3 ft. high, repeatedly dichotomously branched and almost candelabriform, somewhat purplish; branches almost horizontal, but again slightly recurved at the tip, over $\frac{1}{2}$ in. thick. *Flowers* secund, all directed upwards and at the same time slightly deflexed; bracts reflexed, about $\frac{1}{4}$ in. long; pedicels $\frac{1}{6}$ – $\frac{1}{4}$ in. long, stout, recurved, green. *Perianth* $1\frac{1}{3}$ in. long, subcylindric, slightly dilated at the top, segments rounded and hardly spreading at the tip, yellow outside striped with green towards the top, the three inner segments with brown tips. *Stamens* projecting $\frac{1}{2}$ – $\frac{3}{4}$ in. beyond the perianth; the exposed portion of the filaments dark violet, the enclosed portion pale yellow; *Style* exserted, pale yellow with a brown tip.

Figs. 1 and 2, anthers; 3, pistil:—all enlarged.

N2272.

(2272)

ALOE MICROCANTHA. SMALL-SPINED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.

Cor. erecta, ore patulo, fundo nectarifero. *Filamenta* receptaculo inserta.

Specific Character and Synonyms.

SECT.* *Corollis* cylindricis reflexis.

ALOE *microcantha*; foliis lineari-loratis canaliculatis margine spinulosis, racemo umbellato laxo, pedunculis corolla longioribus.

ALOE *microcantha*; foliis anguste ensiformibus inferne albo-maculatis, maculis saepe tuberculiformibus oblongis sparsis numerosis, spinis marginalibus rectis albis minutissimis. *Haworth Suppl. Pl. succul.* p. 105.

DESCR. *Leaves* linear-lanceolate, scarcely a foot and a half long, half an inch wide at the base, and gradually tapering to the point; deeply channelled, margins armed with very minute white spines somewhat recurved, palish green with white oval distinct spots, not very fleshy, and of a supple consistence. *Scape* nearly a foot long, semi-cylindrical at the lower part and rounded above, clothed with distinct, ovate, acuminate, streaked, scariose *Bractes*, half embracing the stem. *Flowers* in a terminal, subumbellate, lax raceme, at first erect, then nodding. *Peduncles* white, erect, longer than the corolla, which is cylindrical, an inch and a half long, with rose coloured petals tipped with green, a little recurved at the point: the three exterior ones somewhat the shortest. *Filaments* unequal: *Anthers* oval, orange coloured: *Style* the length of the corolla: *Stigma* capitate.

For



For this very rare species, which is supposed not to exist in any of our other collections except in that of Kew, where it was introduced about two years since from the Cape of Good Hope, we are indebted to THOMAS KITCHIN, Esq. of Norwich, in whose garden, rich in succulent plants, it flowered in July last.

❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀ ❀

HEXANDRIA MONOGYNIA.

Specific Character and Synonyms.

ALOE *mirabilis*. Haworth. Linn. Transf. 7. 9. n. 13. Hort.
Kew. ed. 2. v. 2. 300.

Native of the Cape of Good Hope; from whence it was brought into our gardens by Mr. MASSON in 1790. Seems to be intermediate between *arachnoides* and *retusa*; by some it may be suspected to be a mere variety of the latter, or a mule of the two species. We are indebted to Mr. HAWORTH for the specimen. Should be kept in the common greenhouse; requires no particular care. The foliage is of a darker green than that of *retusa*. G.

No. 1346, l. 8. pro "*crassene e longe*" lege "*crasse nec longe*."
No. 1347, pag. alt. l. 19. for "*corolla* of a pale rusty yellow colour," read "*corolla* from a reddish white fading to a pale rusty yellow colour."

ALOE MITRÆFORMIS. MITRE ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

*Generic Character.—Vid. No. 765.**Specific Character and Synonyms.*

ALOE *mitræformis*; (*caudescens*; *caudex in annofloribus deorsum nudus*; *corolla e grandioribus*;) foliis amplexicaulibus, sparsim ambientibus, confertis, ovato acuminatis, affurgerter convergentibus, margine spinoso-dentatis, nunc acumina pauca brevia dorso vage exferentibus; caule ramofo; racemis densifloribus, sensim oblonge productis; pedunculis ascendentibus, bractea multum longioribus; corolla sexpartita, recta, cylindracea, pendulo-cernua, pedunculis fere æquali; staminibus alternis longioribus corolla: subisometris. G.

ALOE *mitræformis*. Mill. *Dict.*, ed. 8. n. 1. Haworth on *Aloe* in Linn. *Transf.* 7. 23. Decand. *Pl. grasses.* 99. *cum tab.*

A. perfoliata, κ. Willd. *Sp. Pl.* 2. 186.

A. perfoliata, o. *mitræformis*. Hort. Kew. 1. 467.

A. perfoliata. v. Linn. *Sp. Pl.* ed. 2. v. 458.

A. picta v. Thunb. *Diff. de Aloe.* 6. n. 4.

A. africana; *caulescens*; folio crasso, obscure viridi, spinis ad latera et in dorso armato. Boerb. *ind. alt.* 2. 131. n. 39.

A. africana mitriformis spinosa. Dillen. Hort. *Elth.* 21. tab. 17. f. 19.

ALOES mitrè Lam. *Dict. Encyc.*



J. Edwards Del. Pub. by T. Agnew & Sons, Great Britain, March 1816

F. Noyes Sculp.

In young plants the stem is short and entirely covered with leaves, in process of time the lower ones fall off, while the stem attains from two to six feet in height, when the greater part

part becomes woody and naked; *leaves* shortish in proportion to the stem, thick, succulent, brittle, very smooth, convex at the back, depressed on the upper side, marginal *teeth* cartilaginous, generally whitish, rather distant but regular; *flower-stalk* branched, from one to three feet high; in young sterile plants the upper leaves converge more remarkably than in old flower-bearing ones; in the winter they are sometimes clouded with a purplish-brown tint; corolla bright deep scarlet with a greenish brim. Blooms from July to December. Should be kept in the dry stove. Native of the Cape of Good Hope. Propagated by suckers and seeds; from which last MILLER has raised the plant, but did not find it vary in the extraordinary way that LINNÆUS supposed.

Our drawing was made at Mr. SALISBURY's Botanic-Garden, Sloane-Square. G.

ERRATA.

No. 1045 l. 13, *pro* "cujus ungues imo scrobiculati, melliferi;" *lege* "imis unguibus scrobiculo mellifero exsculptis;"

No. 1091, l. 23, *pro* "appicta" *lege* "appacta."

No. 1261, l. 24, *after* "each" *add* "other."

ALOE MITRÆFORMIS(β.) BREVIFOLIA. LEAST
MITRE-ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. No. 1352.*

Specific Character and Synonyms.

ALOE *mitræformis*; (*caudex annosior suborgyalis, desuperne humotenus defoliatus; flores e majoribus, pendulo-cernui, recti;*) foliis sparſe ambientibus, fucculento-fragilibus, ovato-acuminatis concaviusculis, subtus subcarinato-convexis sursum incurvulis (*forma fere depresso-naviculari,*) dentibus cartilagineis brevibus distantius marginatis, a prono sæpius acumina nonnulla vaga exferentibus, fummis confertioribus subcapitato-conniventibus, inferioribus sensim distantioribus; scapo simplici vel corymboſo ramoſo; racemo crebro multifloro oblato-cylindrico vel umbellato-contracto retrorsum imbricato; pedicellis divaricantibus corolla subifometris bractea bis terve longioribus; corolla recto-tubulosa, sexpartito-soluta, rotundato-trigona, ore brevi regulari patula; antheris alternis subemicantibus. G.

ALOE *mitræformis*. α. *Vid. supra No. 1270, ubi synonyma videnda ei propria.*

ALOE *mitræformis*. β. *brevifolia; foliis ovatis brevibus distantibus subtus tuberculatis. Hort. Kew. ed. 2. v. 2. 294; (ad α. reduſta figura ex Decandolleo ibi minus recte ad β. allegata.)*

A. *brevifolia*. Haworth. Linn. Transf. 7. 23. n. 51.

A. *mitræformis*; angustior. (*Le petit mitrè.*) Lamarck. Encyc. 1. 87.

A. *perfoliata*. π. *brevifolia*. Hort. Kew. 467.

OBS. ALOE *brevifolia*. Decand. Pl. Gr. 81, omnino alia ac diversissima species, G.

N^o 1362.



J. E. Smith Del.

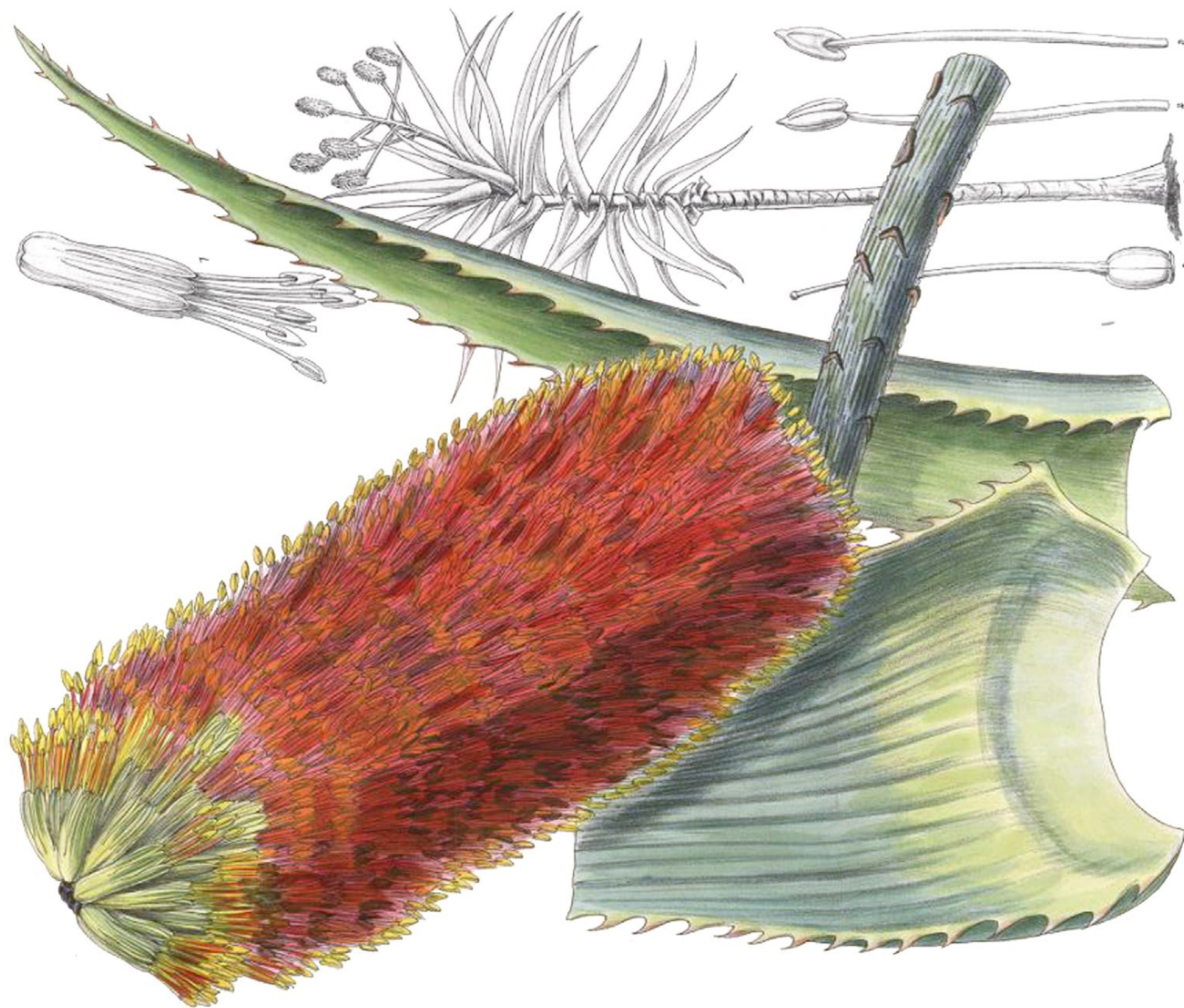
P. G. Smith Sculp.

J. E. Smith Sculp.

We do not find the present plant distinctly noticed in any work prior to the first edition of the Hortus Kewensis. We cannot agree with Mr. HAWORTH in considering it as a different species from the larger plant already given in No. 1270. Native of the Cape of Good Hope. We have seen it with a stem more than three feet high. Our drawing was taken from a plant that flowered at Mr. LODDIGES's Nursery, Hackney. G.

ERRATUM.

No. 1353, l. 18. for "*Id.*" read "*Haworth.*"



A. nitens, Baker in Journ. Linn. Soc. vol. xviii. p. 170, et in Thiselton Dyer, Fl. Cap. vol. vi. p. 325, non Schult. f.; A. africanae, Mill., affinis, a qua inflorescentia paniculata perianthioque recto viridi recedit.

L. Rogers & Co. London

J. S. Mill. J. N. P. Smith. 1876.

TAB. 8147.
ALOE NITENS.
South Africa.

LILIACEAE. Tribe ALOINEAE.

Aloe, Linn.; *Benth. et Hook. f. Gen. Plant.* vol. iii. p. 776.

Aloe nitens, Baker in *Journ. Linn. Soc.* vol. xviii. p. 170, et in *Thiselton Dyer, Fl. Cap.* vol. vi. p. 325, non Schult. f.; *A. africanae*, Mill., affinis, a qua inflorescentia paniculata perianthioque recto viridi recedit.

Caulis simplex, circa 3 m. altus, 7.5 cm. diam. *Folia* prope apicem caulis congesta, lanceolata, glabra, 60 cm. longa, 6 cm. lata; spinae curvatae, brunneae, 3 mm. longae, inter se 8 mm. distantes. *Panícula* racemosa; pedunculi patentes, circa 35 cm. longa; spica multiflora, eam *Kniphofia alooidis*, Moench, simulans; bracteae circa 10 cm. longae; bracteolae dense imbricatae, lunatae, 5 mm. diam., marginibus membranaceis valde recurvis. *Flores* subsessiles, virides. *Perianthium* rectum, cylindricum, 2 cm. longum; segmenta oblonga, obtusa, 4 mm. lata, exteriora herbacea, 5-nervia, interiora membranacea, 3-nervia. *Stamina* perianthio duplo longiora; filamenta complanata, basi 1 mm. lata, in antherae foveoli dorsi-fixae; antherae oblongae, 4 mm. longae, apiculatae. *Ovarium* ovoideum, 6 mm. longum; stylus staminibus aequilongus.

For years *Aloe nitens* has been one of the most striking of the many species cultivated in the Succulent House at Kew, flowering in midwinter every year when its large inflorescence, formed of six or more branches, each bearing a cluster of rich crimson flowers, is a great attraction. It was sent to Kew in 1877 by Sir Henry Barkly when Governor at the Cape, and it is now a fine specimen 12 ft. high, the upper half clothed with long green leaves.

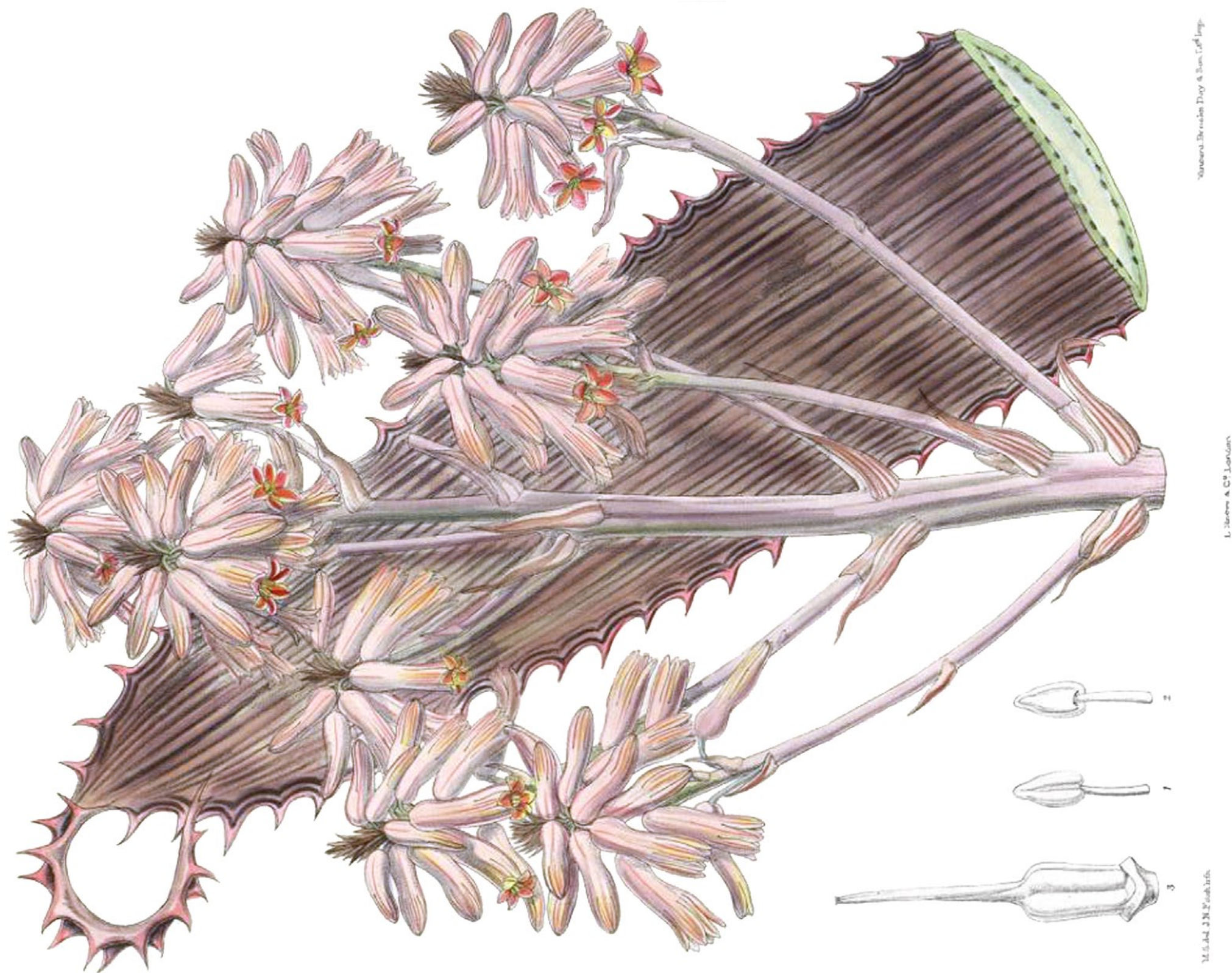
Descr.—*Stem* unbranched, about 12 ft. high, 3 in. in diameter, pale brown. *Leaves* crowded into an apical crown, lanceolate, glabrous, about 2 ft. long and $2\frac{1}{3}$ in. wide, edged with stout brown upcurved spines $\frac{1}{8}$ in. long, and about $\frac{1}{3}$ in. apart. *Panicle* bearing about 7 spikes racemosely arranged; peduncles patent, about 14 in. long; spikes densely many-flowered, resembling those of *Kniphofia alooides*, Moench; bracts about 4 in. long; bracteoles densely imbricate, lunate, about 3 lin. across, with strongly recurved membranous margins; flowers subsessile. *Perianth* straight, cylindrical, $\frac{3}{4}$ in. long, green; segments oblong, obtuse, $\frac{1}{6}$ in. wide, the outer herbaceous and

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5-nerved, the inner membranous and 3-nerved. *Stamens* twice as long as the perianth; filaments flattened, $\frac{1}{24}$ in. wide at the base, inserted into a pit at the back of the anther near its base; anthers oblong, $\frac{1}{5}$ in. long, apiculate. *Ovary* ovoid, $\frac{1}{3}$ in. long; style as long as the stamens.—C. H. WRIGHT.

Cultiv.—Although the genus *Aloe* is not popular in English gardens, a considerable number of the species are decidedly ornamental; their flowers are attractive in form and colour, and they are among the easiest of plants to cultivate. They are generally grown in pots, but where space can be afforded they grow more quickly, and much happier when planted in a border of gravelly soil. *A. nitens* is one of the less tropical species; it would probably be an ideal plant for the gardens of the Riviera.—W. WATSON.

Fig. 1, flower; 2 and 3, stamens; 4, pistil:—*all enlarged*; 5, sketch of the whole plant:—*much reduced*.



Painted by Stueben Day & Son, 1880

L. Stueben & C. J. Lohman

M. S. Day, 22 N. 2nd St., N. Y.

TAB. 8122.
ALOE PALLIDIFLORA.
South Africa?

LILIACEAE. Tribe ALOINEAE.

ALOE, *Linn.*; *Beth. et Hook.f. Gen. Plant.* vol. iii p. 776

Aloe pallidiflora, A. Berger in *Engl. Bot. Jahrb.* vol. xxvi. p. 58; *A. mac canthae*, Baker (B. M. t. 6580), Affinis, foliorum spinis marginalibus inter se prolioribus, perianthioque extus concolore differt.

Acaulis, simplex. *Folia* dense rosulata, erecto-patenti, lineari-lanceolata, longe acuminata, circa 35 cm. longa, 6–8 cm. lata et 1·3–1·5 cm. crasa, faciebus convexis, supra obscure viridia, maculis albidis lineari-oblongis saepe geminatis vix fasciatim dispositis sed saepissime confluentibus marmorata, lineisque concoloribus obscurioribusque praesertim senus margines striato-nervata, sibtus pallide viridia, immaculata; margines sinuato-dentati, aculeis deltoideis apice corneis brunneis pungentibus 3–6 mm. longis armati. *Inflorescentia* 0·8–1·3 m. alta; seapus glaucus, infra medium ramosus, ramis lateralibus 8–13, erecto-patentibnu, terminali brevioribus; racemi superne densi. 4–10 cm. longi; pedicelli circa 1·5 cm. longi; bractee scariosae, deltoideae, subulatae, 3-nerviae, 1–1·5 em. longae. *Perianthium* pallidum, incarnatum, supra ovarium leviter constrictur, faucem versus leviter ampliatur et curvetum, 3 cm. longum, subhexagonum; segmenta ultra medium connata, marginibus albidis, medio pallide striato-nervata, apice leviter recurvula, intus luteola. *Filamenta* vix exserta; antherae oblongae, aurantiaeae.

The plant of *Aloe pallidiflora*, Berger, here figured flowered in the garden of Sir Thomas Hanbury at La Mortola in April, 1906. It was obtained some years ago, without name, from the Royal Botanic Gardens, Berlin, and first flowered in March, 1904. Its native country is unknown, but it certainly is not from German South-West Africa, nor from German East Africa, neither have I seen it in any of the herbaria to which I have had access. Possibly it is a native of South Africa, and perhaps of the eastern regions, as it seems to me to be related to *A. Greatheadii*, Schoenland, in "Records Albany Museum," vol. i. p. 121, and *A. transvaalensis*, O. Kunze, in "Rev. Gen." vol. iii. 2, p. 314, both natives of the Transvaal.

So far it has produced a few capsules, but the seeds did not germinate, neither has it thrown up suckers as so many of its near allies generally do. At La Mortola it is quite hardy, though last year the flower-spike and the tops of the leaves seem to have suffered from the cold of the previous winter.

MARCH 1ST, 1907.

Descr.—A stemless plant. *Leaves* in a dense rosette, erecto-patent, linear-lanceolate, tapering into a long point, about 14 in. long, $2\frac{1}{2}$ –3 in. wide, and $\frac{1}{2}$ in. thick, biconvex in section, dull green above and marbled with long, whitish marks, and nerved with similar lines, especially near the margin, pale green and unspotted beneath; margins sinuate and armed with brown, deltoid, horny, sharp spines as much as $\frac{1}{4}$ in. long. *Inflorescence* from $2\frac{1}{2}$ –4 ft. high; scape glaucous, branched from below the middle; branches 8–13, erecto-patent, the terminal one the shortest; pedicels about $\frac{5}{8}$ in. long; bracts scarious, deltoid, subulate, 3-nerved, about 1 in. long. *Perianth* pale flesh-colour, yellowish inside, $1\frac{1}{4}$ in. long; tube slightly constricted above the ovary, curved and slightly swollen near the throat, somewhat hexagonal; lobes not quite as long as the tube, with whitish margins and central striped area, slightly recurved at the apex. *Filaments* scarcely exerted; anthers oblong, orange.—ALWIN BERGER.

Figs. 1 and 2, stamens; 3, pistil:—*all enlarged*.

ALOE PENTAGONA. PENTAGONAL ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—Vid. No. 756.*Specific Character and Synonyms.*

ALOE *pentagona*; (caudex imbricato-foliatus; flores e minoribus, erecti;) foliis axem ex deorsum pentagono-decussatim superne versus spiraliter sparsimque ambientibus, ovato-acuminatis, pulvinato-craffis, brevibus, rigidis, carinato-cuspidatis, atrovirentibus, glabris vel minutissime elevato-puncticulatis, margine carinaque denticulatis, inferioribus divaricatis, superioribus, convergentibus, supremis minoribus pallidioribus convoluto-concavis (nunc subtus tuberculis paucis albidis parum salientibus notatis); caule ramoso; racemis multifloris, sparsis, laxis; pedicellis corolla 3—4plo brevioribus, bractæas æquantibus; corolla columnaritubulosa, explicata, glabra, in lacinulas sex parabolicas regulari-patulas tubo quadruplo breviores interiores subangustiores suberectiores soluta; staminibus tubo isometris, subdeclinatis, alternis brevioribus; stigmate simplici. G.

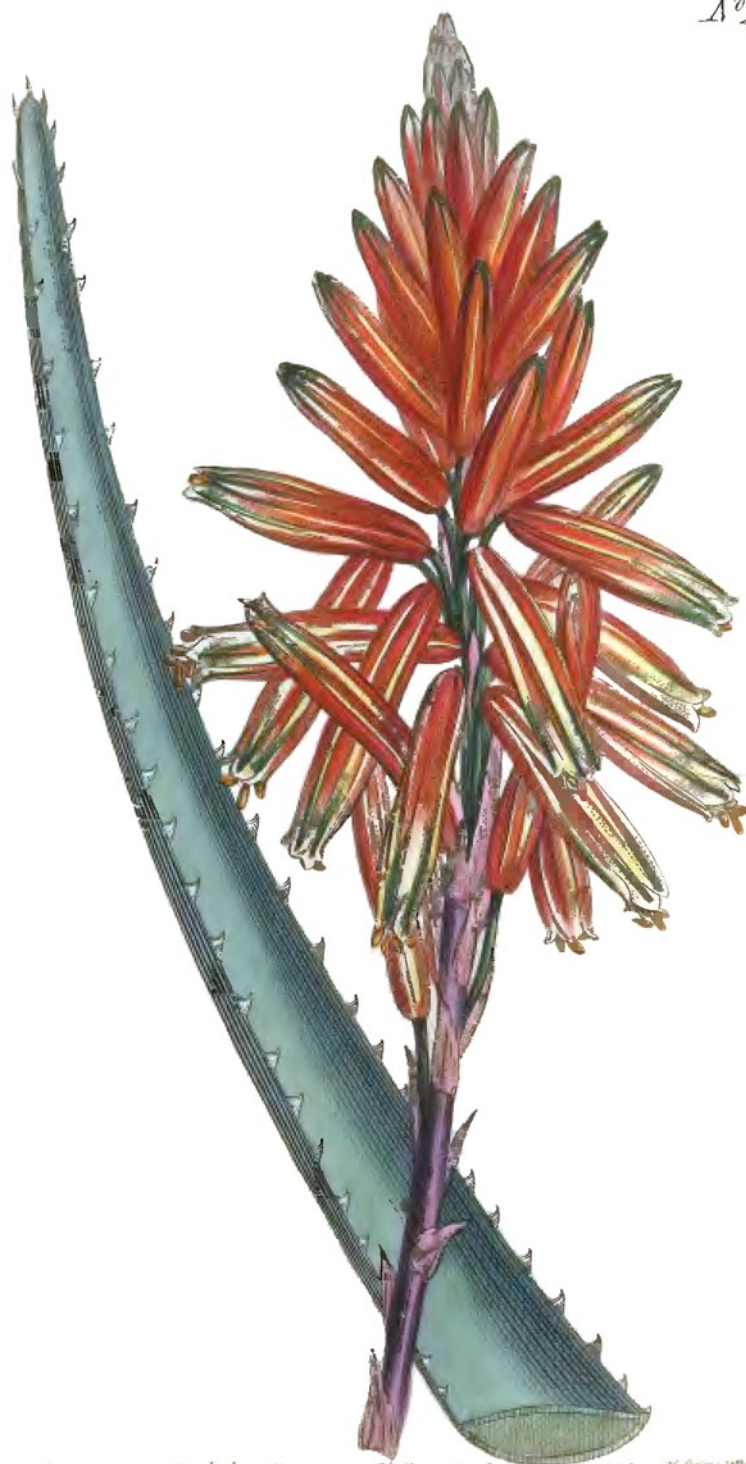
ALOE *pentagona*. Haworth, Linn. Transf. 7. 7. n. 6.ALOE *spiralis*. β . *pentagona*. Hort. Kew. 1. 471. Willd. Sp. Pl. 2. 191; (exclusa passim var. α .)

We have been induced to consider the present plant as specifically distinct from *spiralis*, not so much by the difference in the arrangement and expansion of the leaves, as by the total absence of the transverse wrinkles, so remarkable in the corolla of the latter, in which there are also other minuter distinctions. But still they may possibly be mere varieties of each other. MILLER, in his Dictionary, when speaking of *spiralis*, says, “there

“there is a variety of this sort which has been raised from seeds, which is much larger, the leaves thicker, and the flowers grow upon taller foot-stalks; but this is only a feminal variety.” But whether he had the present plant in view, or some real variety of *spiralis*, we cannot now determine from such loose description.

Native of the Cape of Good Hope. Cultivated in the Kew Gardens. We have to thank Mr. HAWORTH for the specimen.
G.

N^o 472



[472]

ALOË PERFOLIATA, *var.* SUCCOTRINA.
SUCCOTRINE ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.

Cor. erecta, ore patulo, fundo nectarifero. *Filam.* receptaculo inferta.

Specific Character and Synonyms.

ALOË *perfoliata* foliis caulinis dentatis amplexicaulibus vaginantibus, floribus corymbosis cernuis pedunculatis subcylindricis, *var. δ Succotrina.* Ait. Kew. v. 1. p. 466.

ALOË *vera* foliis longissimis et angustissimis marginibus spinosis, floribus spicatis. Mill. Dict.

The figure here given was drawn in January 1799, from a plant in full bloom in the dry stove of the Apothecaries Garden at Chelsea; Mr. FAIRBAIRN informs me that it flowers regularly every year: the plant itself, supposed to be fifty years old, has a stem the thickness of one's arm, naked for the space of about four feet from the ground, then dividing into several large heads, formed of the leaves growing in clusters, from the centre of which arise the flowering-stems, two feet or more in length, producing spikes of flowers frequently much longer than those represented on the plate; these before they open are upright, when fully blown they hang down, and when out of bloom they turn upwards.

This undoubtedly is the *Aloë vera* of MILLER, and the *perfoliata var. succotrina* of Mr. AITON, that which produces the Succotrine Aloes of the shops, and is said to grow in the island of Zocotra or Socotora, in the Straits of Babelmandel; it is therefore highly interesting as a medicinal plant, and very desirable as an ornamental one.

It is propagated by offsets, which it does not produce in any plenty, and to have it in perfection, it must be treated as a dry-stove plant.

TAB. 6596.

ALOE PERRYI.

Native of the Island of Socotra.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Baker in Journ. Linn. Soc. vol. xviii. p. 152.*)

ALOE *Perryi*; caule brevi simplici, foliis 12–20 dense rosulatis lanceolatis acuminatis subpedalibus e basi ad apicem sensim angustatis glauco-viridibus rubro-tinctis facie canaliculatis dentibus marginalibus deltoideo-cuspidatis parvis pallide brunneis, pedunculo deorsum applanato, racemis 1–3 oblongo-cylindricis, pedicellis flore 3–4-plo brevioribus, bracteis minutis lanceolato-deltaideis, perianthii rubro-lutei pollicaris segmentis oblongis tubo cylindrico triplo brevioribus, genitalibus demum breviter exsertis.

A. Perryi, *Baker in Journ. Linn. Soc. vol. xviii. p. 161.*

The subject of the present plate is a plant of unusual interest. It is said that Aloes was known to the Greeks as a product of the island of Socotra as early as the fourth century before the Christian era; and yet till very recently no material has been obtained from which the botanical characters of the plant which yields the drug could be settled. In the absence of any precise information on the subject, botanists and pharmacists have supposed that the plant that furnished it was an Aloe which was figured in 1697 by Commelinus from the Medical Garden at Amsterdam under the name of "*Aloe Succotrina Angustifolia Spinosa flore purpureo*," a species which was called *Aloe vera* by Philip Miller, and has been characterized by Lamarck and several later authors under the name of *Aloe Succotrina*. By the researches of Mr. Bolus this plant has now been ascertained to be really a native of the Cape of Good Hope, and the Socotra Aloe proves to be a species confined to that island, closely allied in general habit to the well-known Barbadoes Aloe (*Aloe vera*, Linn. = *A. barbadensis*, Miller = *A. vulgaris*, Lam.), but differing in its shorter leaves, and especially in its flowers, which have a tube much longer than the segments, and are arranged in looser racemes, on

DECEMBER 1ST, 1881.



longer pedicels. Our first specimens of the Socotra plant were brought to Kew in 1878 by Mr. Wykeham Perry, but these were without flower. A year later we had similar examples brought by Mr. Jas. Collins; but for full knowledge of the plant and of its best differential characters we are indebted to Professor Bayley Balfour of Glasgow, who made a thorough exploration of the island last year under the auspices of the British Association for the Advancement of Science, and brought home a collection of plants, which includes a large number of new genera and species. Our drawing is made from living plants presented by Dr. Balfour to Kew, two of which flowered in the Succulent-house in the summer of the present year. He found it spread widely through the island, especially in the limestone tracts, ranging from sea-level to an altitude of 3000 feet; and he has also found in small quantity what appears to be a second endemic Socotran species with dwarfer habit and spotted leaves.

DESCR. *Trunk* in the cultivated examples simple, about a foot in length, one and a half or two inches in diameter. *Leaves* twelve to twenty in a dense rosette, lanceolate, a foot long, three inches broad at the base, tapering gradually to an acuminate point, a dead rather glaucous green with a reddish tinge towards the edge, channelled all the way down the face, one-sixth of an inch thick in the centre, the small deltoid-cuspidate pale-brown marginal prickles about a quarter of an inch apart. *Inflorescence* one and a half or two feet long, generally with two or three forks, rarely simple; peduncle purple-tinted, flattened towards the base; racemes oblong-cylindrical, three to six inches long, two inches in diameter; pedicels red, a quarter or a third of an inch long, the lower ones cernuous; bracts lanceolate-deltoid, shorter than the pedicels. *Perianth* cylindrical, an inch long, bright red, with a green tip in an early stage, turning yellow as it matures; tube cylindrical, rather constricted at the middle; segments oblong, a third as long as the tube. *Stamens* and *style* finally slightly exerted.—*J. G. Baker.*

Fig. 1, A flower complete; 2, back and front view of anthers; 3, pistil; 4, horizontal section of ovary:—*all more or less enlarged.*

ALOE PICTA. SPOTTED-LEAVED ALOE.

Generic Character.—*Vid. No. 756.**Specific Character and Synonyms.*

ALOE *pecta*; (modobreviternude vel modototus folioso-subcaudescens; flores e majoribus, tereti-trigone tubulosis, rectis, pendulocernui;) foliis confertim ambientibus, patentissimis, crassis, ovato-lanceolatis, subglaucescentibus, maculis oblongis inæqualibus utrinque vage pictis, spinis denuo fulvescentibus dentato-marginatis; racemo densiuspicato-pyramidato; pedicellis erecto-divergentibus, corollam subæquantibus; bracteis sphacelatis his subtriplo brevioribus; staminibus subinclusis. G.

ALOE *pecta*. Thunb. Diff. n. 4. Prod. 61. Decand. Pl. Gr. tab. 97. Willd. Sp. Pl. 2. 186; (castigata synonymia.)

A. *saponaria*; v. obscura. Haworth. Linn. Transf. 7. 17; (excl. Braddl. Succ.)

A. *perfoliata*; obscura. Hort. Kew. 1. 467.

A. *obscura*. Mill. Dict. ed. 8. n. 6.

A. *perfoliata*. µ. Linn. Sp. Pl. ed. 2. 1. 458.

A. *africana maculata spinosa minor*. Dill. Hort. Eltham. p. 18. tab. 15. fig. 16.

Native of the Cape of Good Hope. Cultivated in SHE-RARD's garden at Eltham. Requires to be kept in a good greenhouse, where it flowers about August or September. Has been generally confounded with the Common Soap-Aloe, which has a short subumbellate raceme; and will be given in one of the subsequent numbers. Our drawing was made from a plant in Mr. HAWORTH's collection. G.

NOTE.

In No. 837 (ALOE VERRUCOSA) l. 12. dele "Thunb. 9. Prod. 61;" dum in loco adjicias synonymia sequentia;

ALOE *disticha*. Thunb. Diff. p. 7. n. 9. Prod. 61.

A. *fessilis* foliis carinatis utraque verrucosis bifariam versis. Mill. Dict. ed. 7, n. 20.

A. *africana* foliis longis conjugatis supra cavis margaritifloris flore rubro elegantissimo. Boerb. Ind. Alt. 2, tab. 131.

A. *africana*, &c. &c. Till. Pisam. tab. 8.



ALOE PLICATILIS. FAN ALOE,

Class and Order.

HEXANDRIA MONOGYNIA.

*Generic Character.**Cor.* erecta, ore patulo, fundo nectarifero. *Filam.* receptaculo inferta.*Specific Character and Synonyms.*ALOE *plicatilis* subcaulis, foliis linguiformibus lævibus distichis, floribus racemosis pendulis cylindricis.*Ait. Kew. v. 1. p. 470.*ALOE *dysticha* var. *ε.* *Linn. Sp. Pl. ed. 3. p. 459.*ALOE *plicatilis* foliis ensiformibus inermis ancipitibus, floribus laxè spicatis, caule fruticoso. *Mill. Dict. ed. 5. 4to.*ALOE *africana* arborescens montana non spinosa, folio longissimo plicatili, flore rubro. *Comm. Hort. 2. p. 5. t. 3.*

“The Fan Aloe grows to the height of six or seven feet, with a strong stem, towards the upper part of which are produced two, three, or four heads, composed of long, compressed, pliable leaves, of a sea-green colour, and ending obtusely; these are placed in a double row, lying over each other, with their edges the same way; the flowers are produced in short loose spikes, are of a red colour, and appear at different times of the year.” *Mill. Dict.*

LINNÆUS originally made this plant a variety of his *Aloe dysticha*, the leaves in their mode of growth are indeed truly distichous, few plants afford a better example of such, but they differ materially from those of the real *dysticha* both in form and colour: Mr. MILLER, with great propriety, made distinct species of it, by the name of *plicatilis*, or *Fan Aloe*, which Mr. AITON has continued; and by the name of *Fan Aloe* it is very generally known: we may remark, however, that though this term may be justified by the form into which the leaves expand, the *folium plicatile* of LINNÆUS is a very different kind of a leaf.

Both the foliage and flowers of this plant are very handsome, in the course of many years it grows to a great size; in the Chelsea Garden there are some fine plants of it, which grew there in the time of MILLER, by whom it was cultivated in 1731.

It is a native of Africa, requires the same treatment as the other Aloes, and is propagated by dividing and planting its heads.



TAB. 6705.

ALOE PRATENSIS.

Native of the Cape of Good Hope.

Nat. Ord. LILIACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Benth. et Hook. f. Gen. Pl. vol. iii. p. 776.*)

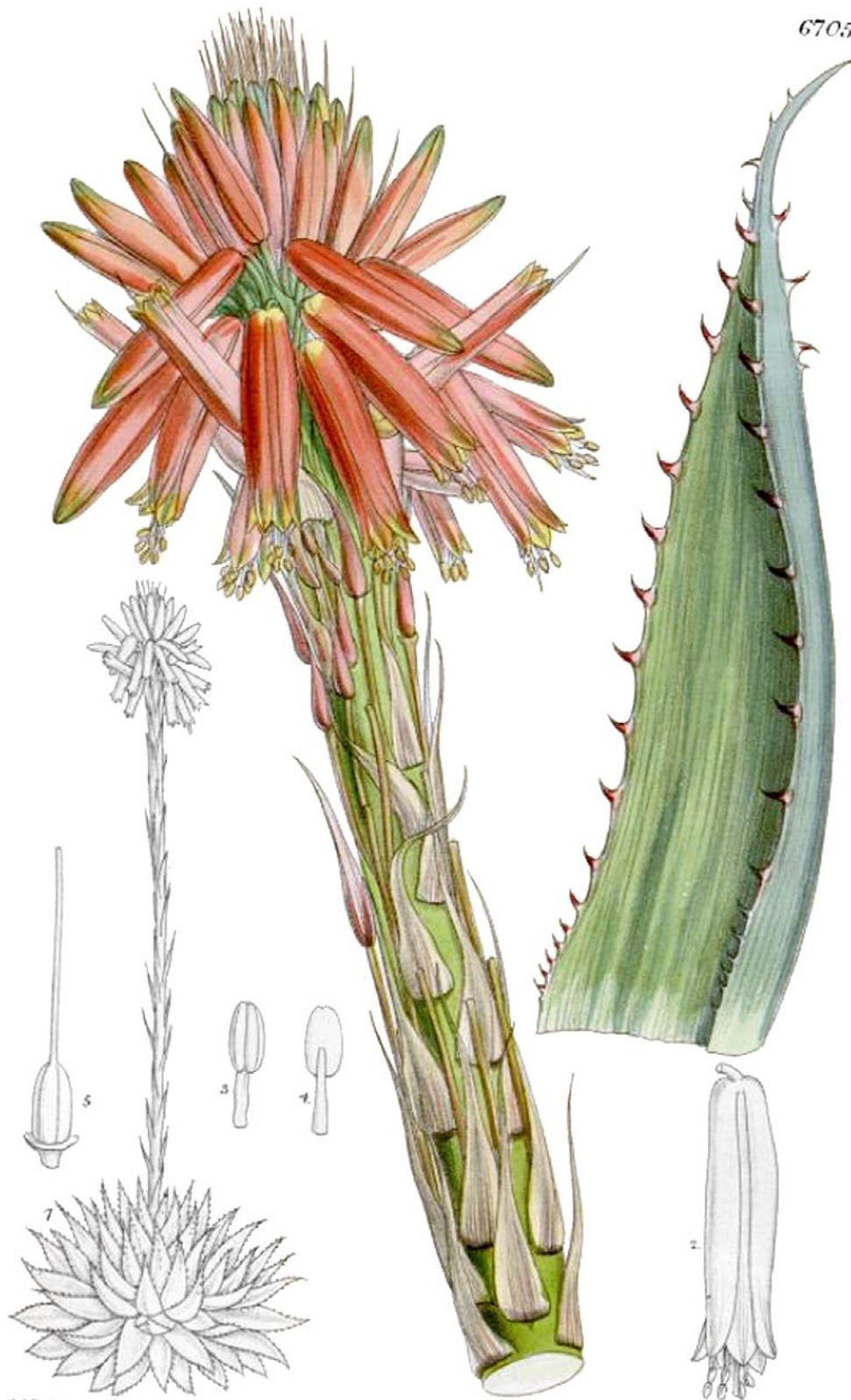
ALOE pratensis; acaulis, foliis permultis dense rosulatis oblongo-lanceolatis acuminatis semipedalibus viridibus glauco tinctis immaculatis obscure verticaliter lineatis dorso superne tuberculato-aculeatis margine aculeis magnis patulis rubro-brunneis armatis, pedunculo valido simplici bracteis vacuis multis scariosis ovatis acuminatis prædito, racemo denso simplici, pedicellis ascendentibus flore sæpe longioribus, bracteis magnis ovatis acuminatis, perianthii splendide rubri tubo brevissimo campanulato, segmentis lanceolatis, genitalibus demum breviter exsertis.

A. pratensis, *Baker in Journ. Linn. Soc. vol. xviii. p. 156.*

This is a well-marked and very handsome new species of the dwarf acaulescent group of Aloes, allied to *A. humilis* and *A. aristata*. We first received it from Mr. Thomas Cooper, of Reigate, in whose rich collection it flowered several years ago. In 1872, Professor McOwan sent two fine specimens for the Herbarium, gathered on the summit of the Boschberg, at an elevation of 4500 feet above sea-level. Lately it has flowered again in the collection of Mr. Justus Corderoy, of Blewbury, near Didcot, from whose specimen the present drawing was made.

DESCR. Acaulescent. *Leaves* sixty or eighty in a dense rosette, oblong-lanceolate, acuminate, the outer ones five or six inches long, the inner ones growing gradually smaller, an inch and a half broad at the base, exclusive of the spines, narrowed gradually from the base to the point, firm in texture, an eighth of an inch thick in the middle, green with a slight glaucous tinge, obscurely lineate vertically on both back and face, not spotted, furnished on the margin with large red-brown deltoid cuspidate horny spines, a few of which extend to the back of the leaf near its tip. *Peduncle* short, stout, simple, a foot or more in length,

AUGUST 1ST, 1883.



Vincenz. Brooks, Day & Son Imp.

J. Reeve & Co. London.

furnished with copious ascending scariose ovate acuminate empty bracts. *Raceme* dense, simple, finally half a foot or a foot long; pedicels ascending, often longer than the flowers; bracts of the inflorescence just like those of the peduncle. *Perianth* cylindrical, bright red tipped with green, an inch and a quarter long; segments lanceolate, united only in a short cup at the base. *Stamens* and *style* finally a little exserted from the perianth; anthers minute, oblong, orange-yellow.—*J. G. Baker*.

Fig. 1, The whole plant, *much reduced*; 2, a flower, *slightly enlarged*; 3, an anther, viewed from the face; 4, an anther, viewed from the back; 5, pistil:—*all enlarged*.

ALOE RADULA. RASP-LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.--*id.* No. 756.*Specific Character and Synonyms.*

ALOE *Radula*; (*ecaudicata; annosior cespitosim stolonifera; flores e minoribus, erecti;*) foliis radicalibus, plurimo ordine fasciculato-compactis, divaricatis divergentibus, incurvulis recurvulifve, lanceolato-subulatis, plano-convexis, coriaceo-crassis, saturate viridibus, per tubercula cretaceo-albicantia, mutica, in prona parte grossiora laxius, in supina minutiora creberrime, radulae more asperatis; caule gracili flexili laxe racemoso; pedicellis corollae quater brevioribus, bracteis æquantibus, corollae sextriato-tubulosa, basi turgidula, usque circa medium sexfida, revoluta bilabiata, labio infimo subdepressiore; laciniis divergentibus, lineari-oblongis, obtusulis, imarum duabus lateralibus convoluto-angustatis; staminibus tubum æquantibus, alternantibus; stylo germen æquante; stigmatibus tribus minutis. *G.*

ALOE *Radula*. Jacquin. Hort. Schœnb. 4. tab. 35.ALOE *attenuata*. Haworth in Linn. Transf. 7. 11. n. 18.ALOE *africana margaritifera minor*, foliis multo longioribus.
Boerb. Index. Alt. 2. 130. n. 27.

G. H. Edwards Del.

Pub. by J. Curtis Walworth & Sons 1817.

F. T. S. S. S. S. S.

This plant seems never to have been distinctly recorded except in the books above quoted; but has been most probably confounded among the varieties of *margaritifera*; from which it differs, by slenderer far attenuated leaves, as well as in the flatness and roughening or toothing of their inner surface, which resembles that of a file or rasp, and is of a yellowish green

green colour; by its corolla not being subfeffile, as well in being flenderer and parted nearly to the middle, with farther divergent and spirally revolute segments; the *stem* is also flexile and far flenderer, with fewer and more distant *flowers*. *Leaves* from one and a half to near three inches long, about half an inch across at their base, gradually attenuated, elongated-cuspidate; the tubercles are smaller and of a chalky whiteness, without the pearl-like hue of those on the leaves of *margaritifera*. Mr. HAWORTH, to whom we are so often and so much obliged for his kind communications, has a plant of this species, which by its numerous suckers forms a compact hemisphaerical bush a foot or more in diameter.

Native of the Cape of Good Hope; blooms in the greenhouse during the latter months of summer. *G.*

ALOE RETUSA. CUSHION ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

*Generic Character.**Cor.* erecta, ore patulo, fundo nectarifero. *Filam.* receptaculo inferta.*Specific Character and Synonyms.*ALOE *retusa* acaulis foliis quinquenariis deltoideis. *Thunb. Aloe, n. 15. Ait. Kew. 471.*ALOE *retusa* floribus sessilibus triquetris bilabiatis labio inferiore revoluta. *Linn. Sp. Pl. 459.*ALOE *africana* brevissimo crassifoliusque folio, flore viridi. *Comm. hort. 2. p. 11. t. 6. Till. pif. 6. t. 5.*

Though the flowers of this Aloe have little to recommend them, there is much to admire in the form and structure of leaves; and this pleasing circumstance attends it, it is perfectly distinct from all the other species: when first introduced, it was no doubt an object of great admiration; FAIRCHILD, the celebrated Gardener of Hoxton, who preceded MILLER, had it engraved, with several other succulents, on a plate which is prefixed to Dr. BLAIR's *Botanic Essays*, and which he inscribed to the Doctor, betwixt whom and Mr. FAIRCHILD there appears to have subsisted a great degree of intimacy: the *Essays* were printed in 1720.

This species is a native of the Cape, and flowers in June, but not regularly so, increases very fast by offsets: Mr. AITON makes it as he does all the Aloes indiscriminately, Dry Stove Plant, but it may be kept in a good green-house, taking care to place it in the driest and most airy part, and to guard it at all time from much wet, but more especially in the winter season.

ALOE RHODACANTHA. RED-SPINED
GLAUCOUS ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—Vid. No. 765.

Specific Character and Synonyms.

ALOE *rhodacantha*; (caudex brevis; junior totus foliosus; vetustior infra denudatus; flores recti, cylindrici, e majoribus;) foliis amplexicaulibus, conferte ambientibus, lanceolato-acuminatis, brevibus, patulis, molli-
bus glaucis, spinis densioribus rectis fulvis margine et nunc parce acuminibus vagis ad summum dorsum munitis; caule simplici toto fere ab imo bracteis sphacelato-membranaceis latius lanceolatis stipato; racemo spicatum producto, rariusculo; pedicellis erecto-divergentibus, flori subæqualibus; corolla pendulo-cernua, laciniis basin usque liberis, apice breviter revolutis; filamentis has æquantibus; stigma acutiusculo. G.

ALOE *rhodacantha*. Decandolle Pl. Gr. 41. tab. 41.

A. glauca. Haworth. Linn. Transf. 7. 18. n. 39.

A. perfoliata. v. Wild. Sp. Pl. 2. 186.

A. perfoliata. ζ. *glauca*. Hort. Kew, 1. 466. Mart. Mill. Dict. excl. syn.

A. perfoliata. κ. Linn. Sp. Pl. ed. 2, v. 1. 458. Thunb. Diff. 5. n. 3.

A. africana spinis rubris ornata. Weinm. Phyt. t. 71.

A. africana foliis glaucis margine et dorso parte superiore spinosis, flore rubro. Comm. Præl. 75. tab. 24. cum fl. Hort. Amst 2. 23. tab. 12. sine fl.



DECANDOLLE observes that this species differs from *mitraformis* (No. 270) by a trunk that is not arborefcnt, soft
glaucous

glaucous *leaves* with red *spines*, *flower-stem* nearly covered with *bractes*, and a *corolla* green at the top, as well as in habit and time of flowering. A native of the Cape of Good Hope; of long standing in our collections. Should be kept in the greenhouse. Our drawing was made from a plant that flowered last summer at Mr. HAWORTH's, Little Chelsea. *G.*



ERRATA.

No. 994, l. 20, pro "*racemosa*" lege "*racemofo*."

No. 1260, l. 24, pro "1." lege "2."

No. 1272, l. 14, pro "*nec*" lege "*nunc*."

ALOE RIGIDA. STIFF-LEAVED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. No. 756.**Specific Character and Synonyms.*

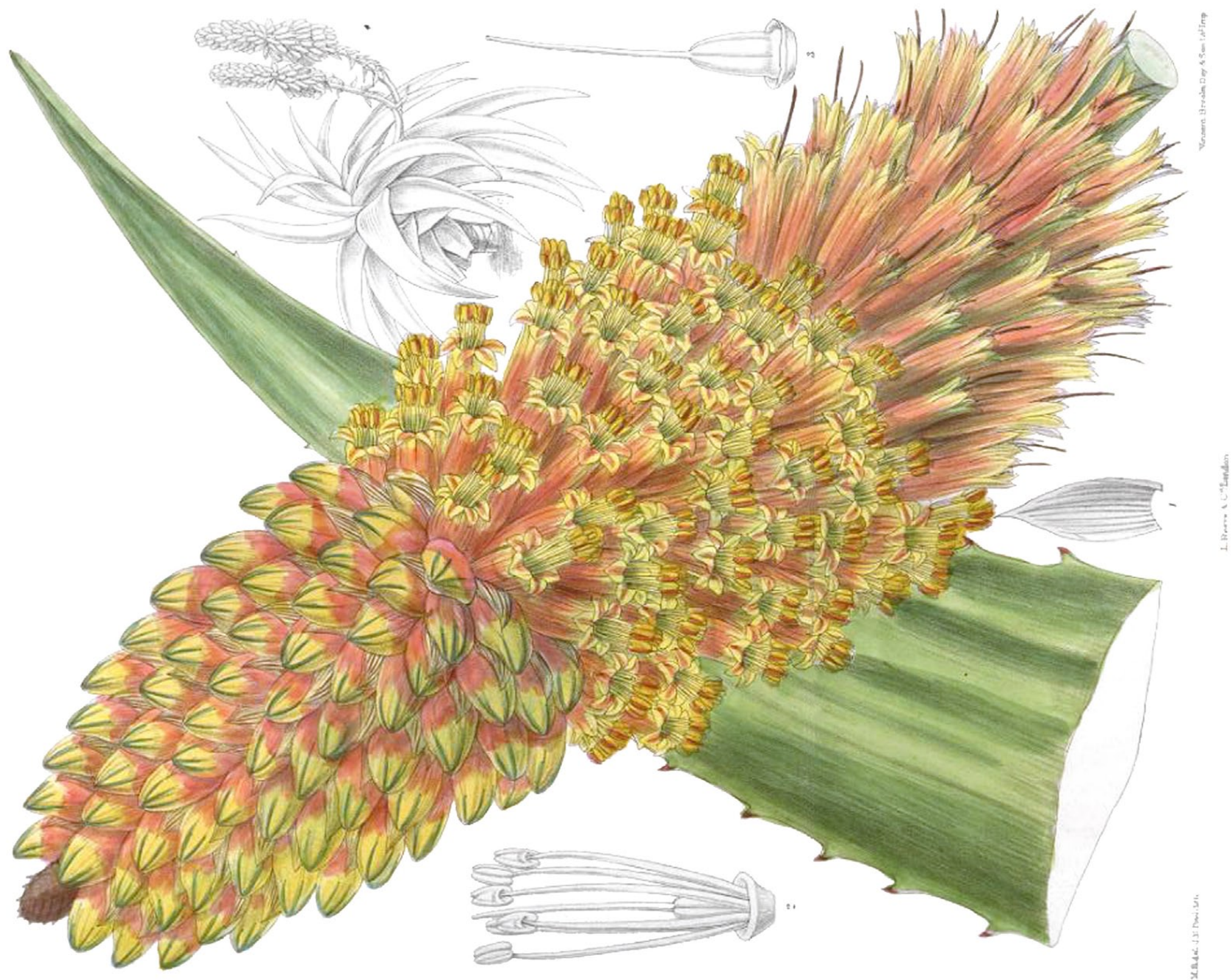
ALOE rigida; (caudex subnullus vel palmaris, imbricato-foliat; flores minores, erecti;) foliis axem multifariam ambientibus, oblongo-acuminatis, carinato-cuspidatis, brevibus, coriaceo-crassis, atrovirentibus, pufulatim corrugatis, recurvato-divaricatis, supra convoluto-concavis, infra convexis; caule simplici, nudo; racemo sparso, rariufculo; pedicellis corolla triplo brevioribus, bractea subduplo longioribus; corolla bilabiato-tubulosa, sextriata, tertiam usque sexfida; laciniis tribus superioribus convergentibus, recurvato-erectis, planioribus, obtusatis; inferioribus divergentibus, revolutis-deflexis, canaliculatis; staminibus subdeclinatis, alterne brevioribus, tubum aquantibus; stylo illis subduplo brevioribus? stigmate obtusulo, obsolete puberulo. G.

ALOE rigida. Decandolle, *Pl. Gr. tab.* 62.

ALOE expansa. Haworth, *Linn. Transf.* 7. 8. n. 8.

ALOE cylindracea. β . *rigida.* Lam. *Dict.* 89. n. 19.

A greenhouse plant. Native of the Cape of Good Hope; whence, according to Mr. HAWORTH, it was introduced into our collections by Mr. MALCOLM. Blooms during the summer months. Why Mr. HAWORTH should doubt of its being the same with DECANDOLLE's plant we cannot guess, since it agrees in every point with the very detailed and minute description of that author, and sufficiently with the figure given in the same work. The specimen was kindly communicated by Mr. HAWORTH. G.



TAB. 7882.

ALOE RUBROVIOLACEA.
Native of Southern Arabia.

Nat. Ord, LILIACEÆ.—Tribe ALOINÆ.

Genus ALOE, Linn.; (*Benth. & Hook. f. Gen. Plant* vol. iii. p. 776.)

ALOE (Eualoe) *rubroviolacea*; caule crasso monocephalo, foliis dense rosulatis bipedalibus patenti-recurvis subfalcatis late lanceolato-ensiformibus ad $\frac{3}{4}$ poll. crassis glauco-viridibus pruinoso-violacea supra planiusculis subtus convexis marginibus corneis rubris remote spinoso-dentatis dentibus $\frac{1}{6}$ poll. longis incurvis rubris apicem versus folii evanidis, scapo valido basi compresso adscendente pare ramoso, spicis binis 2–3-pedalibus 4 poll. diam. cylindracei densiflori, bracteis 1–1 $\frac{1}{2}$ poll. longis lanceolatis siccis infra racemum vacuis, floralibus striati albo late marginatis, floribus brevissime pedicellatis pendulis deorsum imbricatis, perianthio 1 $\frac{1}{2}$ poll. longo cylindraceo $\frac{1}{3}$ poll. diam. pallide rubro, segmentis infra medium connatis apicibus deltoideo-recurvis pallidis, staminibus longe exsertis, antheris ohroleucis demum atro-brunneis.

A. *rubroviolacea*, Schweinf in *Bull. Herb. Boiss.* vol. ii. App. II. (1894) p. 71. *Notizblatt. Berl. Bot. Gart.* vol. i. p. 5 (1897).

For the opportunity of figuring this noble plant I am indebted to my friend, Sir Thomas Hanbury, F.L.S., of La Mortola, who sent to the Royal Gardens, Kew, in March, 1902, a flowering raceme, a leaf, a photograph of the whole plant made by Sir Edmund Loder, Bart., and an excellent detailed description, with notes on its affinities, &c., by Sir Thomas's able Curator, Mr. Alwin Berger, of which I have largely availed myself. Mr. Berger says, "The plant was received from the Berlin Botanic Gardens. It flowered for the first time at the Palazzo Orenco in the spring of 1900, and produced a few capsules with good seed, from which a stock of seedlings has been raised. In the severe winter of last year the flowering scape was injured by the frost." Mr. Berger adds, "The inflorescence is composed at present of two spikes only, but it may become more branched in future. Concerning its allies I think there can be no doubt it belongs to the group with *A. Salm-Dyckiana*, Schult. fil., *A. drepanophylla*, Baker, and *A. chloroleuca*, Baker. It cannot be grouped under *Pachidendron*, for the perianth is not at all clavate, its

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segments are much longer than the tube, and the bracts are much larger than in that group. None of its allies are found near its habitat, all being South African. It is therefore of high interest in point of view of geographical distribution. A further exploration of Arabia may bring other allies to our knowledge."

Dr. Schweinfurth discovered this species on Mt. Schibam above Menacha in Southern Arabia, near the old castle, at about nine thousand five hundred feet (two thousand nine hundred met.) above the sea.

Descr.—*Stem* very stout, twenty inches high by four in diameter, with a single declinate head of leaves. *Leaves* about two feet long, by six inches broad, densely rosulate, sub-falcate, spreading and recurved, ensiformly lanceolate, about three-fourths of an inch thick, narrowed into a rather obtuse point, pale green, with a faint, violet bloom, nearly flat above; convex beneath, margins horny, red, armed, except towards the tip, with rather distant, shortly incurved, red spines. *Scape* ascending, bearing two branches terminated by large cylindric spikes, each two to three feet long, densely clothed with imbricating, pendulous, pale red flowers. *Perianth* an inch and a half long, cylindric, one-third of an inch diameter. *Segments* connate for one-third of their length, tips spreading, pale, outer with three darker greenish lines, inner with a broader, central, red band. *Filaments* exerted for about one-fourth of their length; anthers oblong, dark ochroleous, at length brownish black.—*J.D.H.*

Fig. 1, bracts; 2, stamen and pistil; 3, pistil:—all except 1 *enlarged*.

ALOE SAPONARIA (β .) SATIFOLIA. LARGEST
COMMON SOAP-ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. No. 756.*

Specific Character and Synonyms.

ALOE *saponaria*; (*crassene e longe caudescens; flores e majoribus, penduli, cylindrare;*) foliis caudicem summum divergentem ambientibus, imbricato-confertis, ovato vel oblongato-lanceolatis, lamina maculis (quam in pita triplo-granulioribus) albis verticaliter ellipticis in feries imperfectas subtransversim directas compactis utrinque picta, margine spinis brevibus subirregulariter dentata; caule simplici vel ramofo; racemo umbellatim contracto; pedicellis ascendenter divergentibus, corollae isometris, bractea fusce nervosa bis longioribus; corolla pendulo-cernua, subclavato-cylindrica, obsolete trigona, leviter curvata, basi infra stricturam subglobose extumescens; laciniis tres partes usque inter se concretis, inde conniventibus, ore brevi patulis; antheris subexclusis. G.

ALOE *saponaria*. Haworth in Linn. Transf. 7. 17. n. 35; (*exclusa varietate obscura*).

(α .) *minor*; foliis angustioribus, lateribus rectioribus, sub dio hepatico-fuscescentibus; caule simplici.

A. saponaria. minor. Haworth. l. c.

A. umbellata. Decandolle. Pl. Gr. tab. 98; (*excl. synonym. jam supra No. 1323 ad pictam citatis.*)

A. picta. β . minor; (*quoad solum synonymon Hort. Kew.; ea enim Linnæi et Dillenii pictam in No. 1323 spectant.*)

A. perfoliata. ε . saponaria. Hort. Kew. 1. 467.

A. perfoliata. θ . λ . Linn. Spec. Pl. ed. 2. 1. 458.

A. disticha. Mill. Dict. ed. 8, n. 5.

A. maculosa:



- A. maculosa*: (*moucheté*.) *Lam. Encyc.* 1. 87. n. 9.
A. caulescens, foliis caulem amplexantibus, floribus aurantiacis. *Bradl. Hist. Pl. Succ. Dec.* 4. 11. *cum Icon.*
A. africana maculata spinosa major. *Dillen. Hort. Eltham.* 17. *tab.* 14. *fig.* 15.
A. caulescens, foliis spinosis maculis ab utraque parte albicantibus notatis. *Comm. Hort. Amst.* 2. p. 9. *tab.* 5. (*sine flore.*) *Boerh. Ind. Alt.* 2. 230. n. 19.
 (β.) *latifolia*; foliis latioribus ovato-lanceolatis saturate viridibus; caule ramofo.
A. saponaria. latifolia. *Haw. l. c. p.* 18.
-

The caudex seldom rises above two feet high; MILLER says, that “the leaves are of a dark green colour spotted with white, resembling soft-soap;” which must account for the whimsical specific name. The bloom appears in August and September. Corolla nearly two inches long, of a beautiful red-lead colour. Native of the Cape of Good Hope; although it has been carelessly called by BRADLEY, “Common spotted American ALOE;” and by others, according to MILLER, “Carolina ALOE.” An old inhabitant of our greenhouses. We have to thank Mr. HAWORTH for the present specimen. *G.*



TAB. 7667.

ALOE SCHWEINFURTHII.

Native of tropical N.E. Africa.

Nat. Ord. LILLACEÆ.—Tribe ALOINEÆ.

Genus ALOE, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. iii. p. 776.)

ALOE (Eualoe) *Schweinfurthii*; acaulis v. caulescens, foliis per plurimis confertis incurvo-erectis 2–2½-pedalibus a basi compressa biconvexa 7 poll. lata sensim in apicem angustatis medium versus 2 poll. latis plano-convexis pallide viridibus marginibus rubris et aculeis brevibus remotis deltoideis incurvis rubris armatis, scapis pedalibus, inflorescentiæ paniculatæ ramis ascendentibus simplicibus robustis fusco-rubris apicibus floriferis infimis 6-pollicaribus, omnibus bracteis parvis late ovatis acuminatis conspersis, florum racemulis 3–4-pollicaribus erectis densifloris, pedicellis gracilibus erectis apice decurvis, bracteis iis ramulorum consimilibus, floribus 1½ poll. longis pendulis, perianthio cylindræo recto v. lente curvo basi rotundato infra medium corallino dein aureo, lobis parvis ovatis recurvis, antheris exsertis flavidis, ovario oblongo, stylo recto deflexo, stigmate punctiforme, capsula parva late oblonga obtusa obtuse trigona, valvis coriaceis transverse reticulatis, seminibus parvis late alatis.

A. *Schweinfurthii*, *Baker in Journ. Linn. Soc.* vol. xviii. (1885) p. 175; in *Fl. Trop. Afr.* vol. vii. p. 467. *Gard. Chron.* 1898, vol. i. p. 197, fig. 76.

Aloe Schweinfurthii is certainly the handsomest of all the species hitherto figured in this work. Of these its nearest tropical African ally is *A. Kirkii*, Baker, tab. 7386, which differs conspicuously in the short pedicels of the flowers, and in the spines of the leaves. Amongst the South African species it comes nearest to *A. virens*, Haw. tab. 1355, a much smaller plant, with a simple raceme, leaves dorsally tubercled, and bright red flowers, with perianth-segments longer than the tube.

The discoverer of this stately plant is Dr. Schweinfurth, who found it in the granite hill of Makporvu, in the Nyam Nyam county of N.E. tropical Africa, lat. 4° 45' N., long. 28° 30' E.; that is on the confines of the Bahr el Ghazal.

It was described originally by Mr. Baker, from dried specimens (distributed by its discoverer, Ser. iii. n. 167 of his Herbarium) as being caulescent; with close set mar-
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ginal teeth on the leaves, a compressed peduncle, and a short, campanulate perianth-tube.

For the specimen from which the accompanying figure was made, and for a sketch of the whole plant, I am indebted to Commendatore Hanbury, F.L.S., who flowered it in his renowned garden of Pal. Orengo, La Mortola, in February of this year. I have also received a photograph of the whole plant through the kindness of Miss Wilmott, of Gt. Warley, Essex, with which Mr. Hanbury's sketch given here, perfectly corresponds.

Descr.—*Stemless* (as grown at La Mortola). *Leaves* two to three feet long, very numerous, all radical, sub-erect and incurved, tapering from a compressed base seven inches broad to an acute tip, section above the base biconvex, about an inch thick, and across the middle plano-convex, pale green, margins red, armed with rather distant short deltoid incurved red spines about one-sixth of an inch long, and as broad. *Peduncle* about a foot high, terete, red-brown, naked, branching above into a panicle as long as the leaves; branches of panicle rather distant, ascending, pale red-brown, lower a span long, girt at the very base by two short appressed bracts, an inner annular, and an outer broadly ovate acute, bearing above solitary acuminate bracts a quarter to a third of an inch long, of the colour of the branch. *Flowers* in short, oblong racemes, three to four inches long, terminating the branches, crowded, pendulous; pedicels about as long as the flowers, very slender, erect with decurved tips; bracts like those on the branch, but narrower and paler. *Perianth* about an inch long, cylindric, straight or slightly curved, bright red in the lower half, golden-yellow in the upper; lobes very short, obtuse, recurved. *Stamens* shortly exserted, anthers dull yellow. *Capsule* two-thirds of an inch long, broadly oblong, obtuse at both ends, valves very coriaceous, transversely wrinkled. *Seeds* many, one-fifth of an inch long, oblong, surrounded by a hyaline wing.—*J.D.H.*

Fig. 1, Transverse section of a leaf towards the base; 2, upper part of a leaf; 3, portion of a panicle:—all of the *nat. size*; 4, a flower; 5, pistil:—*Both enlarged.*

ALOE SERRULATA. SAW-LEAVED ALOE.

Class and Order.

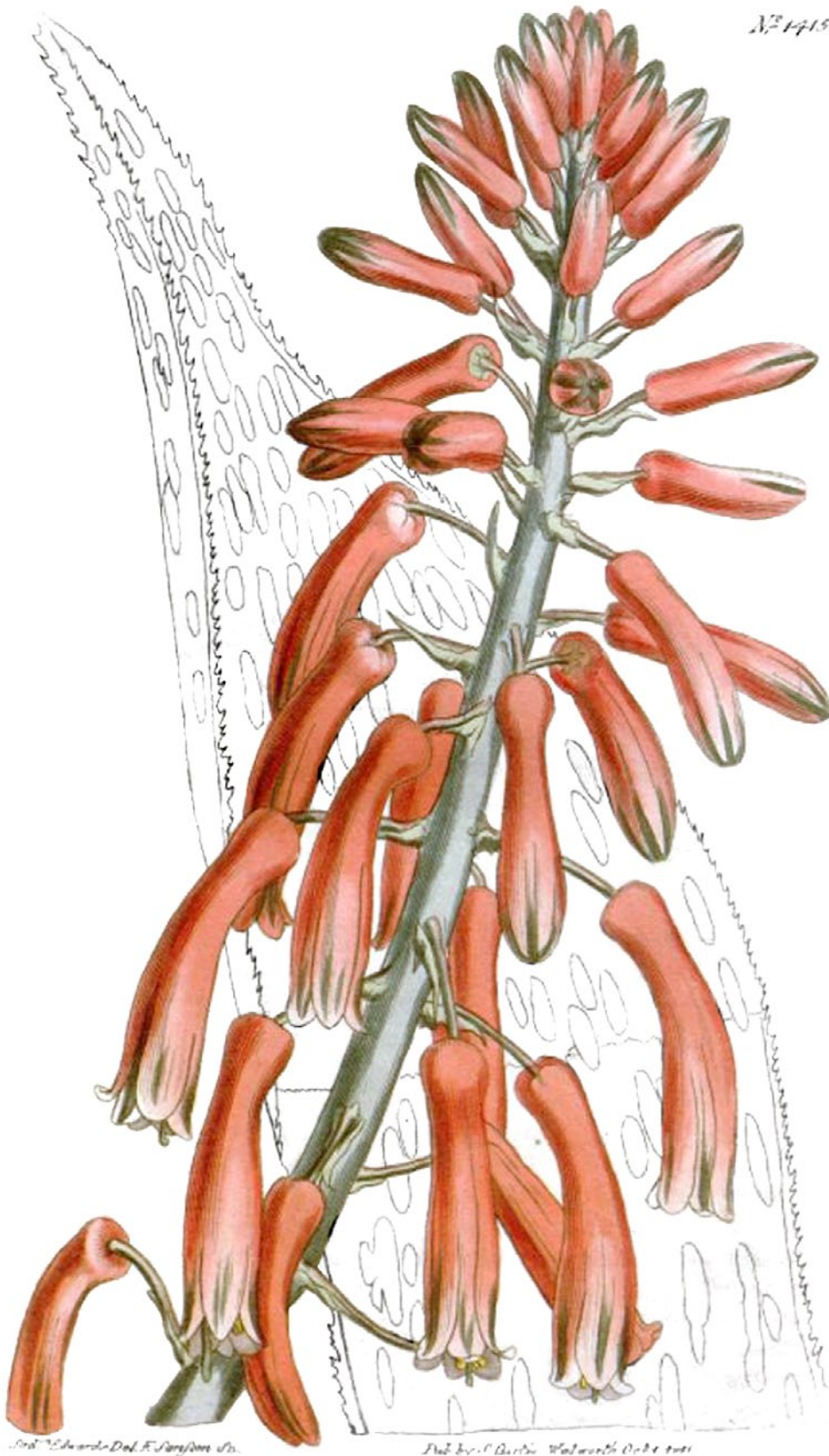
HEXANDRIA MONOGYNIA.

Generic Character.—Vid. No. 1352.*Specific Character and Synonyms.*

ALOE serrulata; (caudex brevior foliatus; flores e majoribus, nutantes, recti;) foliis multifariam ambientibus imbricato-divergentibus, numerosis, lanceolato-acuminatis, albo-maculosis margine carilagineis ferrulato-denticulatis, apice carinato-triquetris; caule subramoso; racemo multifloro remotiusculo; corolla subclavato-cylindracea compressiuscula ore brevi regulari patula, laciniis pro tribus partibus concretis inde conniventibus, obtusulis; germine columellari, roundate trigono, quam stylus subtriplo breviori stylo filamentis graciliore, puncto stigmatoso obsolete pubescente. *G.*

ALOE serrulata. Haworth. *Linn Transf.* 7. 18. *Hort. Kew. ed.* 2. 2. 295.

ALOE perfoliata. $\lambda.$ *ferrulata.* *Hort. Kew.* 1. 467. *Mart. Mill. Dict.*



Very closely allied to *variegata* (supra No. 513;) but is altogether a much larger plant with multifarious ambient leaves not trifariouly decussated as in that, which are also of a much duller greyish green, not undulately variegated as there, but marked with largish distinct oblong white blotches; the pedicles are about half the length of the corolla, and not three or four times shorter than that, as in *variegata*. MILLER, in his Dictionary, after describing *variegata*, says, "I have raised a variety of this from seeds which I received from the Cape of Good Hope, with broader and flatter leaves, which spread

spread more than those of the former, and are not so beautifully spotted; but as these plants have not flowered yet, so I do not know if it will prove a distinct species." This may very probably be our present species. Native of the Cape of Good Hope; introduced before 1789.

Our drawing was taken from a plant that flowered this summer in Mr. HAWORTH's collection. *G.*

ERRATA.

No. 870, l. a paginæ calce 3; dele "precedente."

No. 894, l. 8, pro "*Germen* inferum," lege "*Germen* superum."

No. 1112. l. 14, præ verbo "mucronulo" infere "antheris."

No. 1346, l. a paginæ pede 5 post "minor," infere "*Willd. Sp. Pl.* 1. 186."

No. 1391, l. 7, pro "Mafe." lege "Masc. pro "Fæm." FAEM."

———— l. 10, post "*Nux*" dele periodum.

TAB. 8448.

ALOE STEUDNERI.

Eritrea and Abyssinia.

LILIACEÆ. Tribe ALOINEÆ.

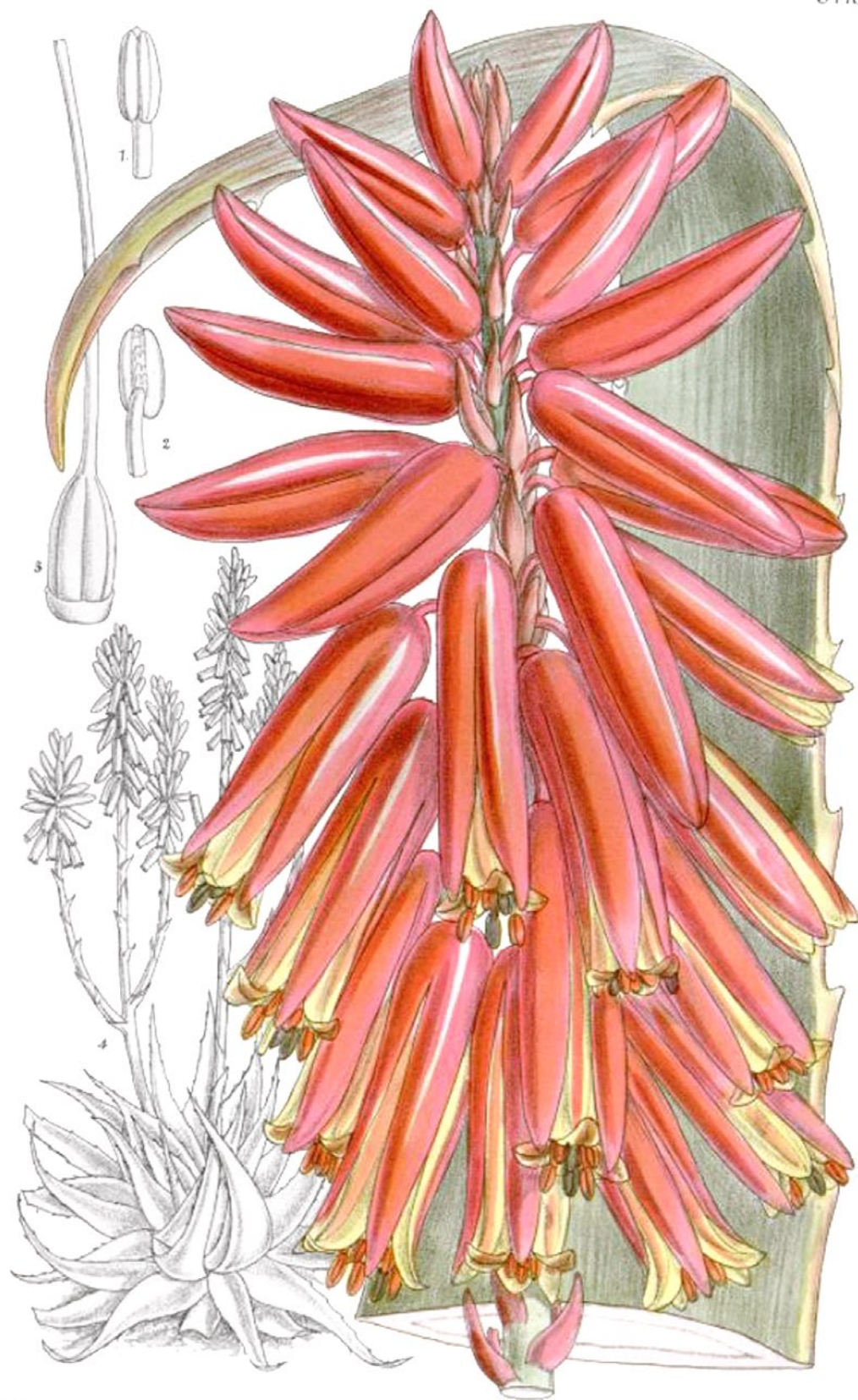
ALOE, Linn.; *Benth. et Hook. f. Gen. Plant.* vol. iii . p. 476.

Aloe Steudneri, Schweinf. in *Bull. Herb. Bois.* vol. ii. App. ii. p. 73; Baker in *Dyer Fl. Trop. Afr.* vol. vii. p. 458; Berger in *Engler, Pflanzenr. Liliaceae-Aloineae*, p. 287; affinis *A. Schöelleri*, Schweinf., sed foliis magis attenuatis marginibus cartilagineis angustioribus pedicellis multo longioribus et perianthii segmentis basi tatum connatis differt.

Herba succulenta, acaulis vel subcaulescens, dichotome divisa. Folia circiter 25, dense rosulata, erecto-patentia vel subineurva, carnosa, 5·5–6 dm. longa, basi 12–15 cm. lata, gradatim attenuata, apice acuta, margine anguste cartilaginea, dentata, pallidissime roseo-tincta dentibus parvis, deltoideis, 1–2 mm. longis, 1–4 cm. inter se sejunctis, supra plana vel leviter convexa sed prope apicem concavo-canaliculata, subtus versus marginem singulum crassiora ideoque oblique convexa, vix carinata. *Inflorescentiae* saepe 2 ex eadem rosula, pedunculis simplicibus vel superne ramosis erectis glaucis sursum purpureo-tinctis 8–9 dm. altis, ramis racemosi 15–25 cm. longis; bracteae erectae, imae pedunculo ramove adpressae, eae flores subtendentes convolutae, pedicellos amplectentes, 1·5–2 cm. longae, ovato-lanceolatae, acuminatae, carinatae, nervis striatae, rubrae; pedicelli 1·8–2 cm. longi, rubri, apice recurvi. *Perianthum* 4·7–5·3 cm. longum, 1·4 cm. latum, trigono-cylindricum, deflexum et prope apicem minopere recurvum, ad basin fere 6-partitum; segmenta lineari-oblonga, obtusa, exteriora 3 recta, intense rubra, interiora 3 apice recurva, inferne rosea, apice fusco-lutea, rubro-costata. *Stamina* inclusa vel subinclusa, filamentis pallide luteis, antheris brunneis, polline salmoneo-carneo. *Stylus* demum exsertus, pallide luteus.

The handsome *Aloe* here figured, which was first described by Dr. Schweinfurth in 1894, is a species for whose introduction European horticulture is indebted to Professor Penzig of Genoa. Schweinfurth's account of the plant was based on Abyssinian specimens gathered by Dr. Steudner in the Ghaba Valley at about 11500 feet above sea-level in 1862, and on some inflorescences collected by Penzig on Mt. Sabr in Eritrea at an altitude of 8500 feet in 1891, along with the living plants whereof that whence our material has been obtained forms one. That *A. Steudneri* is a species as distinct as it is striking has never been in doubt; its precise position and its exact relationship to other species have, however, been somewhat obscure. This

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obscurity has had its origin in the somewhat fragmentary character of the original material, and has been increased by the capricious disposition of the species in the matter of flowering. There is a healthy plant in the succulent collection at Kew, kindly presented by Professor Penzig in 1896. But this plant, though it thrives well under the conditions suitable for other Aloes, has not so far flowered. On the other hand a plant sent by Professor Penzig to the Cambridge Botanic Garden flowered there as early as March 1901. The material for our figure has, however, been derived from yet another plant which flowered for the first time in the garden of Lady Hanbury at La Mortola in April 1911, During the journey in the course of which Penzig rediscovered Steudner's Aloe, he collected young plants of an Aloe which he believed might be *A. Schimper*, Schweinf.; one of these plants was given by him to the late Sir Thomas Hanbury in 1901. When this plant did at length flower it proved to be in reality *A. Steudneri*; the figure here given has been prepared from its flowers and from a photograph communicated, along with a full description, by Mr. A. Berger. In the account here given full use has been made of that description, and of one by Mr. Brown, who, ten years earlier, had occasion to deal with the Cambridge plant. It may be noted, however, that while these two very competent authorities are satisfied that the plant is *A. Steudneri* there is still some obscurity as to its position in the genus. Dealing with this point in the 'Pflanzenreich,' Mr. Berger places the species provisionally at the end of the section *Purpurascens* with *A. purpurascens*, Haw., and *A. succotrina*, Lamk. The study of the living plant has led Mr. Berger to suggest that its affinities are rather with *A. percrassa*, Tod., and *A. rubro-lutea*, Schinz, and has induced Mr. Brown to suggest a close relationship with *A. Schöller*, Schweinf. However this may be, the plant, in spite of the shyness with which it flowers, is a striking one and well worthy of a place in succulent collections.

DESCRIPTION.—*Herb*; succulent, nearly stemless, branching at the base. *Leaves* about 25, in a dense rosette a yard across, erect and somewhat spreading or incurved near the point, about 2 ft. long, 5–6 in. wide at the base, gradually

narrowed to the acute point, with a narrow hyaline somewhat rose-coloured toothed margin, the teeth 1 lin. long or less and separated by intervals of from $\frac{1}{4}$ – $1\frac{1}{2}$ in., upper surface flat or slightly convex, but towards the point concave and channelled, under surface obliquely convex owing to one side of the leaf being rather thicker than the other, hardly keeled. *Inflorescences* usually 2 from the same crown; peduncles erect, simple or sparingly branched, nearly 3 ft. high, glaucous with a purple tinge upwards; the branches racemose, 6–10 in. long; bracts erect, those below empty, adpressed to their stem or branch, the flowering ones convolute, embracing the pedicels, $\frac{1}{2}$ – $\frac{3}{4}$ in. long, ovate-lanceolate, acuminate, keeled, striate, red; pedicels $\frac{2}{3}$ – $\frac{3}{4}$ in. long, red, recurved at the tip. *Perianth* about 2 in. long, over $\frac{1}{2}$ in. wide, slightly trigonous, deflexed and then slightly upturned near the top, 6-partite nearly to the base; segments linear-oblong, obtuse, the 3 outer straight, deep red, the 3 inner recurved at the tip, rose-pink below, dark yellow at the tip, with red veins. *Stamens* included or nearly so; filaments pale yellow; anthers brown; pollen salmon-coloured. *Style* at length exerted, pale yellow.

Figs. 1 and 2, anthers; 3, ovary and style; 4, an entire plant, from a photograph:—*all enlarged except 4, which is much reduced.*

TAB. 6324.

ALOE TRICOLOR.

Native of the Cape of Good Hope.

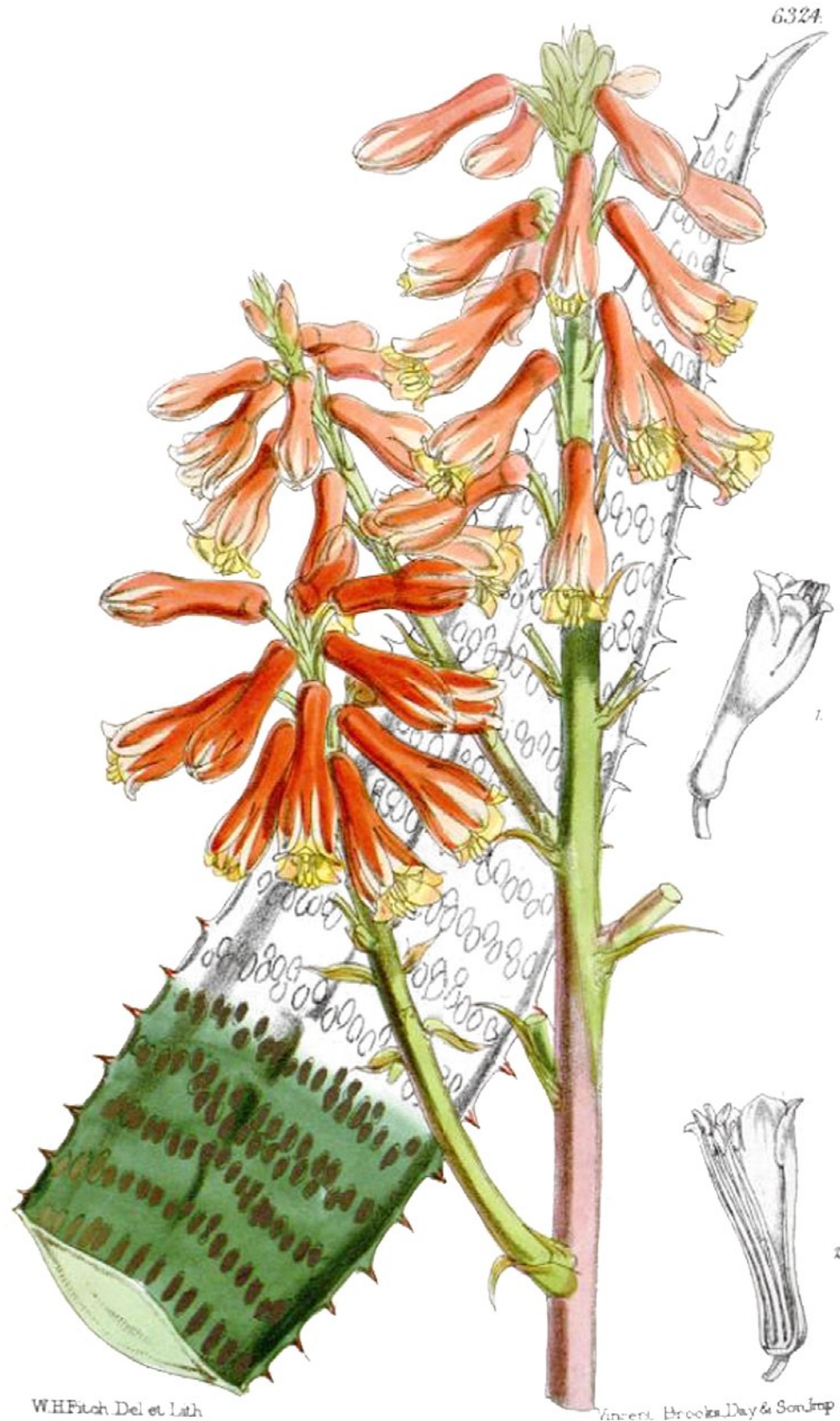
Nat. Ord. LILIACEÆ—Tribe ALOINEÆ.

Genus ALOE, Linn. (*Kunth, Enum. vol. iv. p. 492*).

ALOE tricolor; breviter caulescens, foliis 12–15 dense rosulatis lanceolatis semipedalibus e basi ad apicem attenuatis sordide viridibus maculis copiosis parvis albidis irregulariter seriatis decoratis margine dentibus parvis deltoideis cuspidatis patulis apice castaneis corneis armatis, scapo sesquipedali, paniculis deltoideis parce ramosis ramis brevibus densifloris racemosis, pedicellis 3–4 lin. longis, bracteis lanceolatis acuminatis pedicello sequilongis, perianthii splendide corallino-rubri tubo cylindrico medio constricto, segmentis oblongis introrsum luteis tubo duplo brevioribus, genitalibus inclusis.

This is a fine new dwarf Aloe of the Pictæ group. It differs from *A. obscura*, Miller, and from the well-known *A. Saponaria*, Haworth, with its many subspecies and varieties, by its typically racemose, not capitate inflorescence and by its perianth strongly constricted in the middle. In both these points it agrees with *A. macrocarpa*, a species lately described and figured by Todaro, (*Hort. Bot. Panorm. tab. 9*) sent by Schimper from Abyssinia, from which our present plant differs in the shape and maculation of its leaves. Perhaps it may be, as Mr. N. E. Brown has suggested, the *A. arabica* of which the foliage alone is described by Salmdyck (see Kunth, *Enum. vol. iv. p. 525*). But it is clearly not the plant originally named *arabica* by Lamarck, which is founded on the Arabian *A. variegata* of Forskahl. Our present plant flowered for the first time in the Kew collection this spring. We received it from the Oxford Botanic Garden, and on applying to Professor Lawson he tells me that they got it some time ago, labelled as a Cape species, from Mr. Justus Corderoy, of Blewbury.

DESCR. *Stem* very short, simple. *Leaves* twelve to fifteen, OCTOBER 1ST, 1877.



in a dense rosette, lanceolate, half a foot long, one and a half or two inches broad at the base, narrowed gradually to an acute point, half an inch thick in the middle, rounded on the back, slightly turgid in the upper half of the face, dead green, marked on both faces with copious irregular transverse bands of small crowded oblong or roundish whitish spots, the edge armed with crowded deltoid cuspidate spreading or deflected prickles, a sixteenth or a twelfth of an inch long, which have a horny brown tip, the leaves bordered before they fade with purplish-brown, and at the flowering time all more or less recurved. *Scape* a foot and a half long, purplish, glaucous. *Panicle* deltoid, six or eight inches long, with an end raceme three or four inches long and two or three short erecto-patent branches; pedicels three or four lines long; bracts lanceolate, about as long as the pedicels. *Perianth* an inch long, bright coral-red on the outside; tube twice as long as the segments, constricted at the middle; segments oblong, yellow inside. *Stamens* falling slightly short of the tip of the perianth-segments; oblong anthers a sixteenth of an inch long.—*J. G. Baker.*

Fig. 1, A single flower; 2, perianth, cut open—*both magnified.*

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ALOE VARIEGATA. PARTRIDGE-BREAST
ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.

Cor. erecta, ore patulo, fundo nectarifero. *Filam.* receptaculo inferta.

Specific Character and Synonyms.

ALOE variegata subcaulis, foliis trifariis pictis canaliculatis: angulis cartilagineis, floribus racemosis cylindricis. *Thunb. Aloe*, n. 12. *Ait. Kew.* v. 1. p. 470.

ALOE variegata floribus pedunculatis cernuis racemosis prismaticis: ore patulo æquali. *Linn. Sp. Pl. ed.* 3. p. 459.

ALOE africana humilis, foliis ex albo viridi variegatis. *Comm. præl.* 79. t. 28. var. 27. t. 27.



So many desirable points unite in this Aloe, that we are not to wonder at its being held in such very high esteem by all that have the least taste for plants, especially those of the succulent kind; we frequently see it nursed up with great care by those who have only the convenience of a parlour window, and succeed better with such than in the greenhouses of many: it grows readily and blows freely but irregularly, during most of the summer months; its foliage is beautiful both in its form and markings, and its flowers are no less handsome; it rarely exceeds a foot or a foot and a half in height, when in flower; is increased by offsets, and requires the same treatment as the Aloe tribe in general.

Is a native of the Cape, and was cultivated here by Mr. FAIRCHILD in 1720, *Blair's Bot. Eff.*

MILLER informs us, that he raised a variety of it from Cape seeds with broader and more spreading leaves and a taller flowering stem.

ALOE VERRUCOSA. WARTED ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. N^{um.} 765.**Specific Character and Synonyms.*

ALOE *verrucosa* (*acaulis, curviflora*) foliis distichis lorato subensiformibus obtuse parumque acuminatis, undique atque subconfluentem papillofis; floribus mediis, reflexis; corolla subcoalita. G.

ALOE *verrucosa*. Thunb. 9. *Prod.* 61. *Hort. Kew.* 1. 468. Willd. *Sp. Pl.* 2. 189. *Haworth on Aloe in Linn. Transf.* 7. p. 12.

ALOE *carinata*, v. *ensiformis*. Decand, *Pl. Gr.* 63.

ALOE *disticha*. β. *Sp. Pl.* 459.

A Cape species, now very common in our greenhouses; having been cultivated by MILLER so long ago as 1731.

Our drawing was taken at Mr. MALCOLM's Nursery, Kenfington.

One of the humbler sorts, having leaves about 6—7 inches in length, and far shorter than the flower-stem.

ERRATA.

No. 827, l. 7. for "*sessiflora*" read a "*sessiflorum*".

Ib. l. penult, for "*nether*" read "*mother*."

Ib. p. 2. l. 2. for "*of*" read "*or*."

No. 828, l. 13, after "ALOE" add "*humilis*."



Ed. Edwards del. Pub. by J. Curtis Sc. Gen. Crescent May 1838. T. Sander sculp.

ALOE VIRENS. APPLE-GREEN-LEAVED
ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. No. 1352.*

Specific Character and Synonyms.

ALOE *virens*; (*subcaudescens*; *flores e majoribus, cylindrici, recti, cernui*;) caudice subnullo vel brevi; foliis fasciculatim ambientibus, recurvato divaricantibus, ligulato-attenuatis, plano-convexis, ab acie curvatis, tenerioribus, a prona parte albo rariter a supina parcissime ac prominule guttatis, ad oram molliter distanter ac directe spinosis; racemo distanti, diffuse spicato; pedicellis ascendentibus, corolla bis brevioribus bractea duplo longioribus; corolla pendula, clavato-tubulosa, rotundate trigona, ab ima angustiore ventricoso-dilatata, conniventer patula, laciniis ad medium fere usque conferventibus; stylo exserto. *G.*

ALOE *virens*. Haworth. *Linn. Transf.* 7. 17. n. 34.



Native of the Cape of Good Hope. Nearly allied to *humilis*. The *caudex* is sometimes scarcely above the level of the ground, at others half a foot high, throws out abundance of suckers, so as to become bushy; *leaves* of a bright apple-green colour; about an inch broad at their base; *flowers* of a yellowish red tint, about an inch and half long. Blooms in the autumn. Of easy culture.

We never saw this plant in any other collection than that of Mr. HAWORTH, where our drawing was taken. Most probably introduced since the publication of the Hortus Kewensis. We can find no traces of it in any book known to us. Can hardly have been confounded with the varieties of *humilis*? *G.*

ALOE VISCOSA. TRIANGULAR ALOE.

Class and Order.

HEXANDRIA MONOGYNIA.

Generic Character.—*Vid. No. 765.**Specific Character and Synonyms.*

ALOE *viscosa* (*parviflora*; *caulescens*) foliis omnibus caulinis, brevibus, lanceolato-ovatis, canaliculatis, glabris, trifariam subverticillatis, congesto-imbricatis; scapo filiformi, simplici; racemo distante, corolla cylindrica, bilabiato-patula, fere tota coadunata; stigmatibus obtusis. G.

ALOE *viscosa*. Linn. *Sp.* 460. Mill. *Dict.* 11. Thunb. *Diff.* 13. *Prod.* 61. *Hort. Kew.* 1. 470. Kniph. *Cent.* 4. n. 4. Knorr *Del.* 1. t. A. 10. Willd. *Sp. Pl.* 2. 191. Decand. *Pl. Gr.* 16. t. 16. Haworth *Tr. Linn. Soc.* 7. p. 6.

ALOE foliis canaliculatis trifariam imbricatis ceylanicis apice reflexo-patulis. *Hort. Cliff.* 132. *Upf.* 87. Roy. *Lugdb.* 23.

ALOE africana erecta triangularis et triangulari folio. *Comm. Præl.* 82. t. 31. Dill. *Elth.* 15. t. 13. f. 13. Till. *Pif.* 7. Boerb. *Ind. Alt.* p. 131. n. 32.

ALOE triangularis. Medik. *Bot. Beob.* 61.

ALOE triangulaire. Lam. *Dict.* n. 18.



St. Edwards. Pub. by T. Curtis. St. Geo. Crescent Feb. 1874. P. 100. A.

A Cape species, introduced into our gardens by Dr. JAMES SHERARD, about 1733, where it flowers in June and July; easily propagated by offsets; has so very singular an appearance that it may be distinguished at first sight from all its congeners known to us.

The

The caudex is completely covered by the leaves and is generally from four to eight inches in height; lower leaves imbricately upright, upper imbricately piled and nearly horizontal. Flowers slender, distant, sparse, not showy. Pedicels short. Segments of the corolla connate to where they are bilabedly reflected. Stamens unequal, enclosed. Style shorter than these, filiform. Stigma simple.

Viscosa is not a very eligible appellation, as referring only to the liquid contained in the tube of the corolla, a circumstance not peculiar to this species. *G.*

ANACAMPSEROS ARACHNOIDES. WHITE-
FLOWERED ANACAMPSEROS.

Class and Order.

POLYANDRIA MONOGYNIA.

Generic Character.—*Vid. No. 1367.*

Specific Character and Synonyms.

ANACAMPSEROS *arachnoides*; foliis ovatis acumina-
tis subtus gibbis supra planiusculis
araneosis, stipulis filamentosis folio
brevioribus, pedunculis elongatis.

PORTULACA *arachnoides*; foliis ovatis acuminatis difformi-
bus viridibus lucidis arachnoideis,
racemo simplici, pedunculis teretibus
elongatis. *Haworth Misc., Nat. p. 142.*



This species has the nearest affinity with PORTULACA *Anacampseros* LINN. but is a much smaller plant; the leaves, especially about the lower part, are covered with a kind of web, and the woolly stipules, common to the whole genus, are mixed with longer and more robust threads than in that, though shorter and finer than those of *A. filamentosa*, in which they resemble in degree fine shavings of horn, and are more than twice the length of the leaves. The flowers are white with a delicate tinge of purple. Mr. HAWORTH observes too that the seeds are much less winged than those of *P. Anacampseros*.

This author enumerates five species under the same section, all of which will be included under the genus ANACAMPSE-ROS; but as we have not yet had an opportunity of examining the whole, we shall not undertake to determine whether they may all be sufficiently distinct, but of the two species here figured we think there can be no doubt.

Flowers at the same time and requires the same treatment as the preceding species.

ANACAMPSEROS FILAMENTOSA. THREADY
ANACAMPSEROS.

Class and Order.

POLYANDRIA MONOGYNIA.

Generic Character.

Cal. 2 -phyllus. *Cor.* 5-petala, fugacissima. *Capf.* conica, 1-locularis 3, feu 6-valvis. *Sem.* alata.

OBS. Suffrutices succulentæ, foliis carnosiss gibbis, stipulis lanatis, bracteis laceris.

Specific Character and Synonyms.

ANACAMPSEROS *filamentosa*; foliis globofo-ovatis utrinque gibbis araneosis, stipulis ramentaceis folio longioribus.

PORTULACA *filamentosa*; foliis imbricatis expansis atroviridibus arachnoideis, superne rugosis; filamentis axillaribus folio longioribus. *Haworth Miscel. Nat. p.* 142.

PORTULACA *stipularis*; foliis ovatis utrinque gibbis obtusis lana indutis, stipulis ramentaceis, pedunculo paucifloro. *Dryand. MSS. apud Banks.*



Mr. HAWORTH, by whom we were favoured with the plants from which the present and the following article were drawn, has given the most complete account of the genus PORTULACA, as constituted by LINNÆUS, that we have seen any where. It is from one of his sections that we have, agreeably to his suggestion, framed the genus ANACAMPSEROS, a name by which LINNÆUS originally distinguished one of the species, though he afterwards united it with Portulaca. This he probably would not have done had he known that there were several other closely

closely allied species, all natives of the southern promontory of Africa. LOEFLING has likewise insisted upon the propriety of keeping *Anacampseros* distinct from *Portulaca*; but he probably had in view the American flat-leaved species, which, as suggested by HAWORTH, we would retain under ADANSON's genus *TALINUM*, adopted by JUSSIEU and WILLDENOW. The Cape species appear to us to be as distinct from these as *Talinum* is from *Portulaca*. According to Mr. HAWORTH, all the species of *Anacampseros* have a slender conical seed-vessel of five or six valves, which would afford a sufficient distinction from the three-valved species of *Talinum*; but the capsule of the very species on which we are now treating, is described by DRYANDER as three-valved; as is that of *P. Anacampseros* LINN. by other authors. Probably the valves in decaying may split in the middle, a circumstance not very unusual, and which may have imposed upon Mr. HAWORTH. We hope hereafter to take an opportunity of examining the fructification of this genus more carefully.

This plant was found by the late Mr. MASSON at Carro, beyond Hartequas Kloof. Flowers in August and September. Requires the same treatment as the Cape species of *Aloe* and *Mesembryanthemum*.

APTERANTHES GUSSONIANA.

Gussoni's Apteranthes.

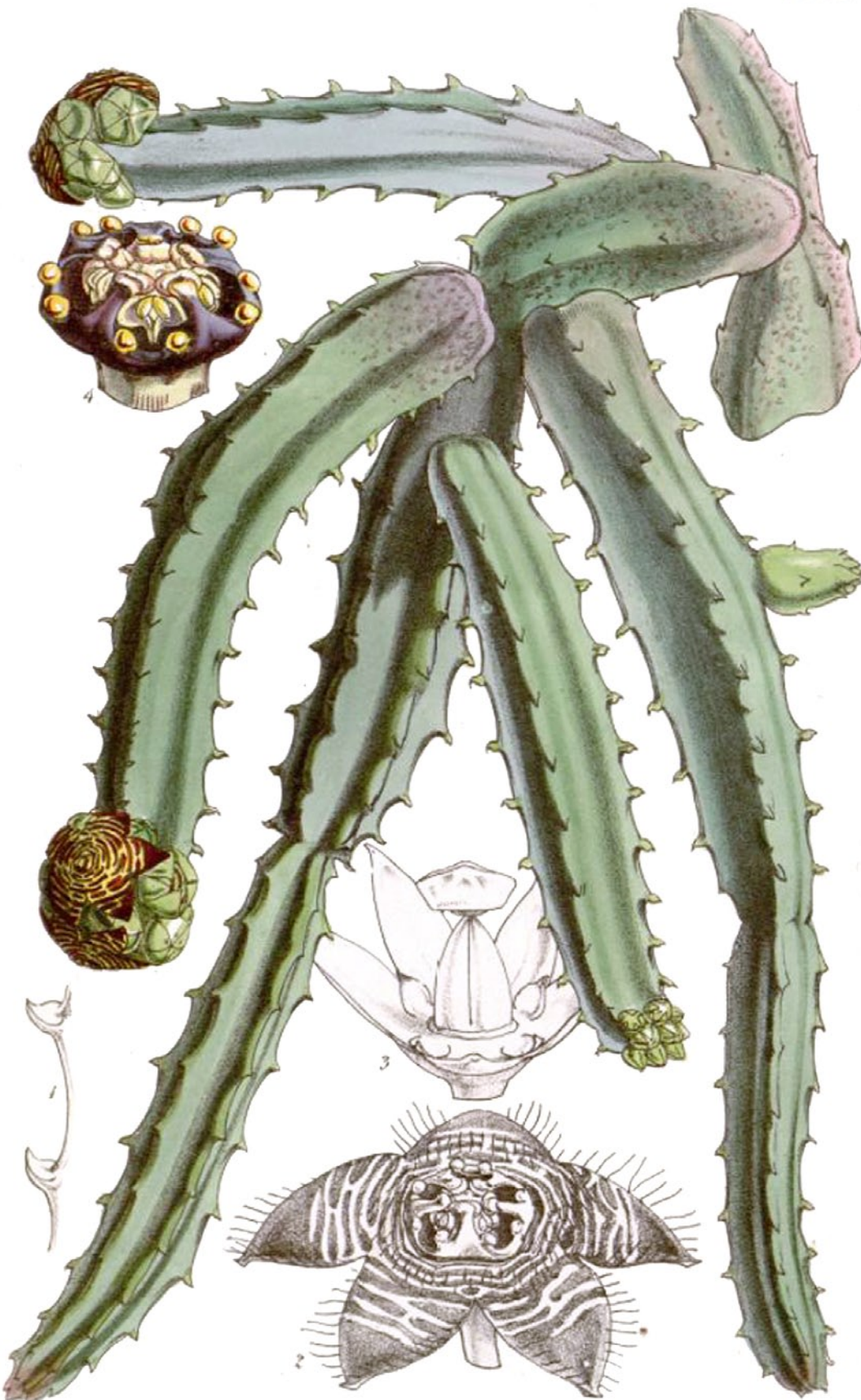
Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA DIGYNIA.

Gen. Char. Calyx quinquepartitus. *Corolla* rotata, quinquefida; *laciniis* late ovatis, apice pilosis. *Gynostegium* faucem subæquans. *Corona* staminea simplex, quinqueloba; *lobis* subtriangularibus, obtusis, stigmate incumbentibus, carnosulis, basi et a latere globulis obtusis flavis stipatis. *Antheræ* apice simplices; *massæ pollinis* rotundate, margine hinc pellucidæ. *Stigma* muticum. *Folliculi* . . — *Herbæ Stapeliæ habitu, in regione Mediterraneâ occidentali, ramis tetragonis dentatis, floribus umbellatis parvis rufo-fuscis transverse rugosis, ad faucem pilis raris inspersis inodoris.* De Cand.

APTERANTHES *Gussoniana*.APTERANTHES *Gussoniana*. *Mikan, Act. Acad. Nat. Cur. v. 17. p. 594. t. 41.*"Gussoni, Notiz. 1832, n. 87, cum ic." *De Cand. Prodr. v. 8. p. 649.**Cosson et Dur. Fl. Alger. t. 62. f. 1 (sine descript.).*STAPELIA *Gussoniana*. *Jacq. in Bot. Reg. t. 1731.*STAPELIA *Europæa*. *Guss. Act. Soc. Borb. v. 4. p. 81, et Suppl. p. 65. Flor. Siculæ, v. 1. p. 288.*BIRCHEROSIA *Munbyana*, "Decaisne in litt." (ad cl. Munby), *Menby, Fl. d'Alger, p. 25.*

Formerly, Asclepiadeous plants, with the habit of the well-known genus *Stapelia*, were supposed to be peculiar to the deserts of southern Africa; but we have now, of this group, the genus *Caralluma*, of which two species are peculiar to the East Indies, one to Arabia; *Boucerosia*, whose nine species are found in the East Indies, Arabia, Senegambia; and *Apteranthes*, the plant now under consideration, the most interesting of all in a geographical point of view, inasmuch as it is the only representative of the group which extends to Europe. It was first, before 1832, detected by Professor Gussoni, on the Sicilian island of Lampedusa; has since been found about Oran, in Algeria, by an English botanist resident there, Mr. Munby; and more recently in saline places at Cape Gata, and at Almeria, in Spain, by Mr. Webb. A solitary species only is known of the genus,

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for "*Apteranthes Numidiea*, Durieu, Explor. Alger. t. 62," of Pritzels valuable 'Iconum Botanicarum Index locupletissimus,' should have been *Campanula Numidiea*, which is the name written and the plant referred to on the plate quoted. Our greenhouse owes the possession of this rarity to Mr. Munby, I believe its discoverer in North Africa, unless the *Stapelia hirsuta* of Desfontaines, Fl. Atlantica, vol. i. p. 213;—surely it cannot be the South African *St. hirsuta*, Linn., although Desfontaines considered it as such. It flowers with us in September.

DESCR. The entire aspect of the plant is that of a small-flowered *Stapelia*; the *stems* and more or less pendent branches are quite leafless, about as thick as one's finger, with from four to six angles, more or less deeply channelled between the angles, and these dentate, at intervals of nearly half an inch from each other, with short, sharp, triangular *teeth*, which are convex below, plane above. *Flowers* small, in *umbels* springing from the apex of a branch, or from a little below the apex, five to seven or eight in an umbel. *Pedicels* very short. *Calyx* quinquepartite; segments lanceolate, acute, spreading; within, at each sinus, are five small ovato-acute scales, only seen on removing the corolla. *Corolla* scarcely three-quarters of an inch broad, rotate, fleshy, pale-yellow, mottled and banded with dingy-purple, the five ovate segments soon recurved, villous at the faux and at the margins. *Gynostegium* sunk in the short tube of the corolla, five-lobed at the margin; the lobes dark-purple, triangular, its apex two-lobed, yellow: and there are two bright-yellow globose *glands* at the base. These lobes are close-pressed upon the stigma. *Anthers* simple at the apex. *Stigma* a depressed, obscurely five- angled, large, peltate disc.

Fig. 1. Teeth, from the angles of the stem. 2. Flower. 3. Portion of calyx and pistil. 4. Gynostegium:—*magnified*.

ASCLEPIAS CARNOSA. THICK-LEAVED
ASCLEPIAS.

Class and Order.

PENTANDRIA DIGYNIA.

Generic Character.

Contorta. *Nectaria* 5, ovata, concava, corniculum exferentia.

Specific Character and Synonyms.

ASCLEPIAS *carnosa*; caule fruticoso quadrangulari volubili, umbellis simplicibus nutantibus, foliis oppositis ovatis margine revolutis carnosis glabris.

ASCLEPIAS *carnosa*. Linn. *Suppl.* 170. Willd. *Sp. Pl.* 1. 1264.

For a specimen of this very rare plant, a native of China, we are indebted to the honourable Mrs. BARRINGTON, in whose collection at Mongewell, in Berkshire, it flowered in July last. LINNÆUS had seen only a small dried specimen, which had been fraudulently given by the Chinese as the plants producing the Gamboge. Had he examined it in a living state it is probable he would not have referred it to the genus *Asclepias*, as it wants the hollow horned nectaries, and is very different in habit from the other species. Perhaps it may form a new genus including *STAPELIA chinensis* and *cochinchinensis* of LOUREIRO;* but as we did not receive the plant from our draughtsman in a sufficiently perfect state to determine with certainty to what genus it really belongs, we have thought it best to continue the appellation given to it in the supplementum, and retained in WILLDENOW's edition of the Species Plantarum.

It has been hitherto treated as a stove plant.

* Whilst this account was in the Press, we have seen LOUREIRO's specimen of *STAPELIA cochinchinensis*, together with a drawing of the flower by our friend, Mr. CHARLES KÖNIG, which confirms our suspicion of the very near affinity of these plants. The habit, the leaves, and the form of the nectaria are exactly similar.



ASCLEPIAS DOUGLASII.

Douglas' Asclepias.

Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA DIGYNIA.

Gen. Char. Cal. alte 5-partitus, sepalis ovatis parvis patulis. Corolla alte 5-partita, laciniis præfloratione valvata, primo patulis dein refractis. Corona staminea summo gynostegio imposita, 5-phylla, foliolis cucullatis, cucullis ovatis v. superne dilatatis semper e fundo processum aversum corniformem stigmati incurvum emittentibus. Antheræ membrana terminatæ. Massæ pollinis compressæ, apice attenuato affixæ, pendulæ. Stigma depressum muticum. Folliculi pergamacei, læves v. ramentacei, v. spinis innocuis onusti. Semina comosa.—Herbæ perennes, Americanæ, præcipue Am. Sept.; folia opposita, verticillata, raro alterna; umbellæ interpetiolares. Dcsne.

ASCLEPIAS *Douglasii*; pubescenti-tomentosa, caule simplici, foliis oblongis ovato-oblongisve acutis subtus tomentosis, pedunculis brevibus pedicellisque tomentosis, umbellis multifloris, corollæ laciniis ovatis acutis extus tomentosis, coronæ foliolis ovatis acuminatis cornu longioribus inferne marginibus utrinque unidentatis.

ASCLEPIAS *Douglasii*. Hook. *Fl. Bor. Am.* v. 2. p. 53. t. 142. De Cand. *Prodr.* v. 8. p. 564.

One of the finest of the genus *Asclepias*: a native of the west side of the Rocky Mountains, where it was detected by Douglas, after whom it was named. Our plant is raised from seeds sent in 1846 from North-west America by Mr. Burke, then Collector for the Royal Gardens. It first flowered in the Nursery of Messrs. Lucombe, Pince, and Co., Exeter, in whose garden it made a fine appearance in the open border. It continues a long time in flower.

DESCR. An erect, herbaceous *plant*, a foot or a foot and a half high, with rather stout, rounded, generally unbranched, woolly *stems*. *Leaves* opposite or ternately whorled, a span long, varying from almost ovate, or ovato-lanceolate (more rarely subcordate) to oblong, acute, downy above, woolly beneath. *Peduncles* short, and as well as the pedicels woolly. *Umbel* many-flowered. Flowers crowded, reddish purple, tinged with green. *Calyx* rather small: *segments*

DECEMBER 1ST, 1848.



of the corolla large, ovate, acute, concave. *Coronal leaflets* very large, at first erect, then spreading, narrow, ovate, much acuminate, below dilated on each side into a blunt toothed *horn* short, incurved.



Fig. 1. Flower. 2 and 3. Coronal leaflets :--magnified



ASCLEPIAS VESTITA. HAIRY-STEMMED
ASCLEPIAS.

Class and Order.

PENTANDRIA DIGYNIA.

(Nat. Ord.—ASCLEPIADÆ.)

Generic Character.

Calyx alte 5-partitus, sepalis ovatis, parvis, patulis. *Corolla* alte 5-partita, laciniis præfloratione valvata, primo patulis dein refractis. *Corona staminea* summo gynostegio imposita, 5-phylla, foliolis cucullatis, cucullis ovatis v. superne dilatatis, semper e fundo processum aversum corniformem stigmati incurvum emittentibus. *Antheræ* membrana terminatæ. *Massæ pollinis* compressæ, apice attenuato affixæ, pendulæ. *Stigma* depressum, muticum. *Folliculi* pergamacei, læves v. ramentacei v. spinis innocuis onusti. *Semina* comosa.—*Herbæ perennes Americanæ præcipue Am. Sept. Folia opposita, verticillata, raro alterna; umbellæ interpetiolares. DC.*

Specific Name and Character.

ASCLEPIAS *vestita*; caule herbaceo ramoso crasso hirsuto, foliis oppositis sessilibus lato-ellipticis subcordatis coriaceis glabris mucronatis, pedunculis intra-axillaribus crassis longitudine foliorum pedicellis floribusque erectis hirsutis, umbellis multifloris densis hemisphæricis, corollæ lobis reflexis, cucullis carnosis truncatis subcylindræo-ventricosus processu corniformi nullo.

A new and well-marked species of ASCLEPIAS, for a knowledge of which we are indebted to Mr. VEITCH of Exeter. He received seeds of it, we believe, from the southern states of North America, and reared it in the greenhouse, where it flowered in October, 1843. It is distinguished



distinguished from all the other species with which I am acquainted by the thick and very hairy stems and peduncles, by the peculiar form of the cuculli or leaflets of the staminal crown, and by the absence of the horn-like processes so common within the cucullus in other species of the Genus.

DESCR. Herbaceous, perennial. *Stems* straight, erect or declined, terete, very hairy. *Leaves* opposite, sessile, broadly elliptical, coriaceous, glabrous, mucronate. *Peduncles* solitary, intra-petiolar, about equal in length with the leaves, bearing a dense hemispherical umbel of numerous, rather large *flowers*. *Pedicels* slender, hairy. *Buds* purple. *Calyx* and *corolla* yellow-green, the latter with the segments reflexed. *Cuculli* or leaflets of the staminal crown, with their margins meeting together so as each to form a ventricose cylinder, truncated at the apex, quite destitute of horn-like process within. *Anthers* with the appendage incurved: at their base is an orange ring. *Pistils* two.

Fig. 1. Flower. 2. Stamens. 3. Leaflet (cucullus) of the staminal crown. 4. Inside view of an Anther:—magnified.

BRACHYSTELMA BARBERIÆ.

Mrs. Barber's Brachystelma.

Nat. Ord. ASCLEPIADÆÆ.—PENTANDRIA DIGYNIA.

Gen. Char. Calyx 5-phyllus. *Corolla* campanulata, sinubus angulatis. *Corona staminea* 5-phylla, foliolis gynostegio medio adnatis, 3-lobis, lobis antheris oppositis simplicibus longioribusque ad basin dentibus binis introrsum plus minus pilosis stipatis. *Gynostegium* inclusum. *Antheræ* simplices, membrana destitute. *Masse pollinis* erectæ, supra basin affixæ, cum margine pellucido quasi operculatæ. *Stigma* muticum. *Folliculi* graciles, læves, erecti, pedunculo recto. *Semina* comosa.—Herbæ Austro-Africanæ, perennes, radice tuberosa, eduli.

BRACHYSTELMA *Barberiæ*; caule brevissimo, foliis lineari-oblongis acutis, floribus numerosissimis in capitulum amplum globosum congestis, corollæ limbo explanato, lobis caudatis elongatis apicibus arcuatis cohærentibus.

BRACHYSTELMA *Barberiæ*. *Hort. mss.*

The ‘Botanical Magazine’ claims the privilege of figuring, from time to time, plants which are not as yet in cultivation in England, but which are so remarkable for their interest or beauty as to be objects of great and special interest, and to which public attention should hence be drawn. Amongst such subjects few can rival the subject of the present Plate, of which an admirable coloured drawing, made by our accomplished correspondent Mrs. Barber, of The Highlands, Graham’s Town, was transmitted to me for our late mutual friend Dr. Harvey, of Dublin, who had already named the plant from dried specimens. On hearing of Dr. Harvey’s decease, Mrs. Barber transferred the drawing to me; and though unable to offer any botanical description of the parts of the flower, I have not hesitated to publish it, both in justice to Dr. Harvey’s memory and to his wish that it should bear the name of the amiable person and zealous botanist to whose exertions we owe our knowledge of it.

The genus *Brachystelma* is a rather large South-African
NOVEMBER 1ST, 1866.



Vincent Brooks imp.

Mrs Barber del. F. & S. lith.

one; the species grow in dry places, and form tuberous roots that are eaten by the natives. Some of the species have erect and others twining stems, but none hitherto described approach this in habit, whilst the coherent Ceropogia-like tips of the corolla-lobes is an unusual character in the genus. It was discovered by Mr. Bowker (Mrs. Barber's brother) in the valleys of the Isomo river, in Kaffirland.

DESCR. *Root* a depressed tuber, as large as a turnip. *Stem* very short. *Leaves* spreading, three to four inches long, linear-oblong, acute. *Flowers* collected into a sessile, dense, globose capitulum, four to five inches in diameter, dingy-purple, speckled with yellow in the disk. *Corolla-limb* one inch broad, slightly concave, shortly five-lobed; *lobes* triangular, terminating in slender tails one inch long, which arch inwards and cohere over the centre of the flower.—*J. D. H.*

(3016)

BRACHYSTELMA CRISPUM. WAVED-LEAVED
BRACHYSTELMA.

Class and Order.

PENTANDRIA DIGYNIA.

(Nat. Ord.—ASCLEPIADEÆ.)

Generic Character.

Corolla campanulata, sinubus angulatis. *Columna* inclusa. *Corona* monophylla, 5-fida; lobis antheris oppositis, dorso simplicibus. *Antheræ* absque membrana apiculari. *Massæ pollinis* erectæ, basi insertæ. *Brown MSS.*

Specific Character and Synonym.

BRACHYSTELMA * *crispum*; foliis elliptico-lanceolatis, corollæ laciniis tubo duplo longioribus, pedunculis sæpius aggregatis.

BRACHYSTELMA *crispum*. *Graham, Descr. of Rare Plants, in Edin. Phil. Journ.*

DESCR. *Tuber* four inches in diameter, round, flattened, slightly depressed, having in the centre a rugged crown or neck, divided at top and permanent, about half or three quarters of an inch high, from which the stems spring when the plant begins to vegetate. *Stems* several, slightly flattened, ascending, much branched, forming a dense, round tuft, (in the specimen described six inches high and ten inches broad,) covered with short, glandular pubescence. *Leaves* opposite, decussating, elliptico-lanceolate, dark green above, paler beneath, covered on both sides with glandular



W.J.H. del.

Pub by S. Curtis, Walworth, Sep. 11850.

Swarz sc.

From *βραχυς*, short, and *σέλας*, a crown, in allusion to the short *corona* of the flower.

glandular pubescence, crisped, on short petioles, with a strong middle rib, and a few veins prominent beneath: at the flowers, the pairs occasionally approach, so as to give the appearance of a four-leaved verticil. *Peduncles* nearly three-fourths of an inch long, simple, rarely solitary, generally aggregated, situated on the side of the stem, between the leaves, two or more frequently agglutinated together in the luxuriant specimen described. *Bracteas* small, awl-shaped, at the base of the peduncles. *Calyx* small, five-parted, pubescent, segments awl-shaped, and very much resembling the bracteas. *Corolla* monopetalous, pubescent within, naked without; *limb* five-parted, plicate, occasionally twisted, forming to the bud an angular, blunt beak, about an inch long, of the same colour as the back of the leaves, segments afterwards spreading wide, their edges revolute, upper surface dark olive-green, *faux* devoid of pubescence, yellow, especially within-side, crowded with deep purplish-brown, oblong, transverse spots, which on the outside are fewer and more rounded; *tube* campanulate; crown deep-purple, included, monophyllous, with five teeth, which are connivent over the *stigma*; there is an emarginate, erect border on the outside of each, and between them five pits, over which are situated the truncated *stamens*, each having two distinct *pollen-masses*, and a depending, central, double beak. *Germen* of two smooth, green, conical *follicles*; each with many ovules attached to their inner side. *Stigma* common to both follicles, large, flat, white.

Several bulbs of this plant were collected in Southern Africa, by Mr. BOWIE, and sent, with many others, in the spring of 1829, to Mr. NEILL, in whose stove at Canon-mills they flowered in May, 1830. The species approaches *BRACHYSTELEMA spathulatum*, Bot. Reg. t. 1113, but it seems to me evidently distinct. Mr. NEILL has received another plant, which has not yet blossomed, from the same quarter, of which the leaves are flat and elliptico-spathulate, while the bulb is somewhat elevated in the centre. It seems probable that it will prove to be the *B. spathulatum*. In the natural groupe of plants to which *BRACHYSTELEMA* belongs, there are many fetid species, but I am not acquainted with any whose smell is so decidedly stercoreous as the present individual. GRAHAM.

TAB. 8817.

BRACHYSTELMA FOETIDUM

South Africa.

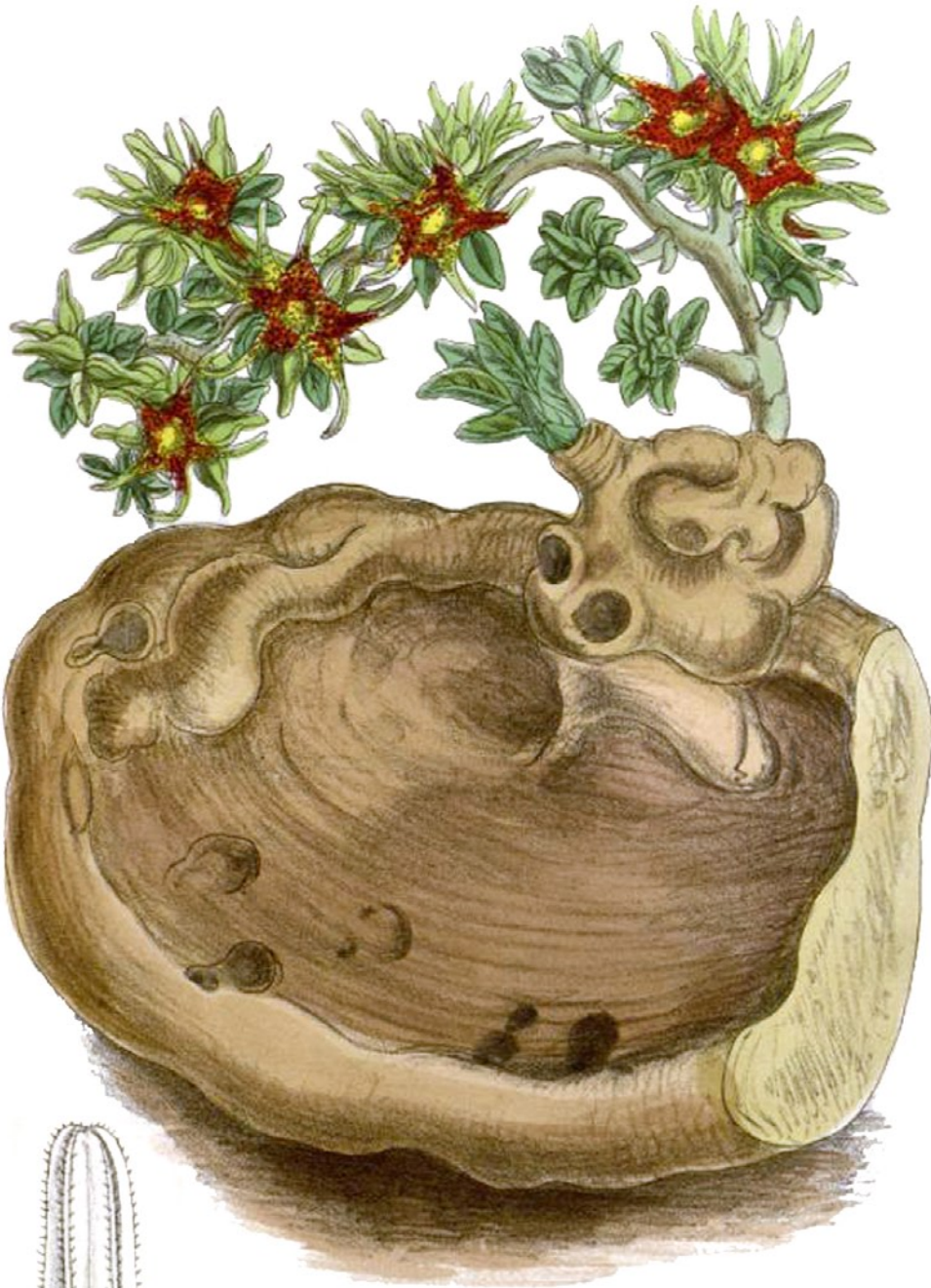
ASCLEPIADACEÆ. Tribe CEROPEGIÆÆ.

BRACHYSTELMA, R. Br.; Benth. et Hook. f. Gen. Plant. vol. ii. p. 781.

Brachystelma foetidum, Schlechter in Engl. Jahrb. vol. xx. Beibl. 51, p. 52 et in Journ. Bot. 1897, p. 292; N. E. Brown in Dyer, Fl. Cap. vol. iv. sect. 1, p. 840; species *B. crispo*, Grah. et *B. tuberoso*, R. Br. affinis, sed ab illa corollae lobis brevioribus glabris vel rarius ad faciem interiorum puberulis, ab hac corollae lobis multo longioribus differt.

Herba perennis caudice tuberoso. *Tuber* complanatus, usque ad 13 cm. diametro. *Caules* solitarii vel plures, adscendentes vel patentes, ramosi, 7–15 cm. longi, pilis brevibus patentibus vestiti. *Folia* opposita, patentia, lineari-lanceolata, lanceolata vel elliptica, rarius obovata, apice acuta vel obtusa, margine interdum undulata, basi in petiolum brevem angustata, utrinque villosa vel supra glabra, 1–5 cm. longa, 3–16 mm. lata. *Flores* axillares, solitarii vel saepius in fasciculis 2–6-floris dispositi, foetidissimi. *Pedicelli* 5–8 mm. longi, pubescentes. *Sepala* lanceolata, acuta, 3–5 longa, pubescentia. *Corolla* 2.5–5 cm. diametro, extra pubescens vel subglabrescens, intus glabra vel rarius puberula, atropurpurea et lutea, lobis superne viridescens; tubo verruculis fuscis notato; tubus campanulatus, 6–8 mm. longus; lobi liberi, patentes, lineares vel lanceolati e basi deltoidea, acuti, 1–2.5 cm. longi, 1–1.5 mm. lati, breviter ciliati. *Corona exterior* cupuliformis, columnam staminalem subaequans, 10-dentata, saccula antheris alternantia formans; dentes erecti, deltoidei, vix 1 mm. longi. *Coronae interioris* lobi lineares, obtusi, usque ad 1 mm. longi, ad dorsa antherarum incumbentes. *Folliculi* geminati vel solitarii, tereti-fusiformes, obtuse rostrati, pubescentes, 6–8 cm. longi, 6–8 mm. crassi.—*B. Rehmanii*, Schlechter in Bull. Herb. Boiss. vol. iv. p. 449.—S. A. SKAN.

This *Brachystelma* was first discovered near the Mooi River, TRANSVAAL, by Joseph Burke, some time between 1840 and 1842. It has since been collected in several other localities in the Transvaal, also in the Orange River Colony, Basutoland and Zululand. Tubers of the plant, collected near Pretoria, were sent to Kew in January, 1917, by Mr. A. M. Bottomley of the Division of Botany, Pretoria, and from one of these the material for the figure was obtained in the following May. It is an interesting and curious plant, but scarcely ornamental, and its flowers, as is often the case in the family, have a very disagreeable odour. The tubers are eaten by the natives, JULY–SEPTEMBER, 1919.



MS. del JNFitch lith.

Vincent Brooks Day & Son Lith.

L. Reeve & Co London

and are known as Hottentot's bread: in the raw state they have a bitter taste. Several species of *Brachystelma* are, or have been, in cultivation; these include *B. tuberosum*, R. Br. (t. 2343), *B. crispum*, Grah. (t. 3016), *B. Barberiae*, Harv. (t. 5607), and *B. oianthum*, Schlechter (t. 8670), which have been figured in this Magazine. The genus comprises about seventy-four species, of which forty-five are natives of South Africa, and nineteen of Tropical Africa; there are several in India, one in Siam, and one in New Guinea. At Kew *B. foetidum* is cultivated in a dry tropical house devoted to succulent plants, where it flowered for the first time in August, 1918, when the figure now given was prepared.

DESCRIPTION.—*Herb* with a perennial tuberous rootstock. *Tuber* flattened, up to 5 in. across. *Stems* solitary or several, ascending or spreading, branched, 3–6 in. long, clothed with short spreading hairs. *Leaves* opposite, spreading, linear-lanceolate, lanceolate or elliptic, rarely obovate, tip acute or obtuse, margin sometimes undulate, narrowed at the base into a short petiole, villous on both surfaces or glabrous above, $\frac{1}{3}$ –2 in. long, $\frac{1}{8}$ – $\frac{3}{5}$ in. wide. *Flowers* axillary, solitary or often in clusters of 2–6, odour very disagreeable. *Pedicels* $\frac{1}{5}$ – $\frac{1}{3}$ in. long, pubescent. *Sepals* lanceolate, acute, $\frac{1}{8}$ – $\frac{1}{5}$ in. long, pubescent. *orolla* 1–2 in. across, pubescent to nearly glabrous outside, glabrous or rarely puberulous within, limb dark-purple and yellow with the lobes greenish upwards, and the tube beset with tawny minute warts; tube campanulate, $\frac{1}{4}$ – $\frac{1}{3}$ in. long; lobes free, spreading, linear or lanceolate from a deltoid base; acute, $\frac{2}{5}$ –1 in. long, $\frac{1}{24}$ – $\frac{1}{16}$ in. wide, shortly ciliate. *Outer corona* cup-shaped, about as long as the staminal column, 10-toothed, so as to form small sacs alternating with the anthers; the teeth themselves erect, deltoid, very short. *Inner corona* with linear, blunt, very short lobes incumbent on the backs of the anthers. *Follicles* geminate or solitary, fusiform-terete, bluntly beaked, pubescent, $2\frac{1}{4}$ – $3\frac{1}{4}$ in. long, $\frac{1}{4}$ – $\frac{1}{3}$ in. wide.

TAB. 8817.—Fig. 1, flower-bud; 2, corona and gynostegium; 3, pollinia:—*all enlarged*.

TAB 8670

BRACHYSTELMA OIANTHUM

South Africa

ASCLEPIADACEAE. Tribe CEROPEGIEAE.

BRACHYSTELMA, *R. Br.; Benth. et Hook. f. Gen. Plant.* vol. ii. p. 781.

Brachystelma oianthum, Schlechter in *Engl. Jahrb.* vol. xx. Beibl. 51, p. 53; *N. E. Br. in Dyer, Fl. Cap.* vol. iv. sect. i. p. 888; species *B. panulato*, *N. E. Br.*, valde affinis, sed corolla pilis longis albis vel atropurpureis instructa, lobis haud ciliatis distinguitur.

Herba tuberosa; tuber planum, circiter 5 cm. diametro; caulis erectu, simplex vel sparse ramosus, pubescens. *Folia* lanceolata, elliptio-lanceolata vel elliptico-oblancoolata, acuta, 1.25–5 cm. longa, fere 2 cm. lata, breviter petiolata, minute ciliata, plus minusve pubescentia. *Flores* solitarii, nuntantes vel horizontales. *Calycis* segmenti lanceolati vel ovato-lanceolati, acuti, 5 mm. longi, sparse pubescentes. *Corolla* ovoideo-campanulata, breviter 5-loba, extra glabra, viridi-flava, maculis atropurpureis instructa; tubus ad 2.4 cm. longus (saepissime brevior) et 2.5 cm. diametro, intus pilis longis albis vel atropurpureis instructus; lobi 5, deltoidei, acuti, circiter 5 mm. longi et 5 mm. lati, longe ciliati. *Coronae* segmenti quinque, in cupulam connati, trilobi, lobis lateralibus (exterioribus) 10 deltoideis obtusis lobis intermediis (interioribus) ad antherarum dorsa adpressis, ea haud excedentibus.—W. B. TURRILL.

The *Brachystelma* here figured is a native of the Orange River Colony, which has been in cultivation in England since 1912, when it was presented to Kew by Dr. R. Marloth, Cape Town. During the period which has elapsed since it was received all its parts have increased in size to a considerable extent. The leaves are now longer and wider and less hirsute than they were during its first season, and the flowers, produced for the first time in May, 1915, are much larger than those in any of the wild specimens from its native habitat in the Kew collection or in those on which Dr. Schlechter based his Original account of *B. oianthum*. The species thrives well in a warm greenhouse under the conditions as to soil and water which are suitable for the South African species of *Stapelia*. The species of the genus *Brachystelma* display considerable variety in the shape of the corolla. The majority are without a distinct corolla-tube, the flower then being saucer-shaped or quite flat. The other

JULY, 1918.



extreme is exemplified in *B. oianthum*, with its ovoid-campanulate or subglobose corolla. Between the two limits an almost unbroken series of intermediate conditions may be met with. In the species figured the structure of the corona is peculiar: the lobes are in two series, but unite to form a cupule apparently composed of five broad 3-lobed segments. What appear to be the lateral lobes of each segment really represent the constituents of a 10-lobed outer corona, while the five intermediate lobes represent the inner corona, the members of which are opposite to and closely applied to the back of the corresponding anthers. The ten lateral lobes are contiguous in pairs which alternate with the intermediate lobes, and may thus owe their origin to fission of five outer corona-lobes alternate with the five inner ones.

DESCRIPTION.—*Herb*; tuber flat, about 2 in. across; stem erect, simple or sparingly branched, pubescent. *Leaves*, lanceolate, elliptic-lanceolate or elliptic-ob lanceolate, acute, $\frac{1}{2}$ –2 in. long, nearly $\frac{3}{4}$ in. wide, short-petioled, minutely ciliate, more or less pubescent. *Flowers* solitary, nodding or horizontal. *Calyx* 5-lobed; segments lanceolate or ovate-lanceolate, acute, $\frac{1}{5}$ in. long, sparingly pubescent. *Corolla* ovoid-campanulate, shortly 5-lobed, glabrous outside, greenish-yellow with dark purple spots; tube sometimes nearly 1 in. long, usually shorter, 1 in. wide, beset inside with long white or dark purple hairs lobes 5, deltoid, acute, about $\frac{1}{5}$ in. long and wide, long-ciliate. *Corona* of 5 segments united in a cupule, each segment 3-lobed, the 10 lateral lobes representing an outer series deltoid obtuse, the 5 intermediate lobes representing an inner series adpressed to the backs of, and not longer than, the anthers.

Fig. 1. bud; 2, corolla in longitudinal section; 3, a single corona-lobe; 4, corona and gynostegium; 5, pollen-masses;—*all enlarged except 2, which is of natural size.*

TAB. 7274.

CARALLUMA CAMPANULATA.

Native of Ceylon.

Nat. Ord. ASCLEPIADEÆ.—Tribe

Genus CARALLUMA, *R. Br. (N.E. Br. in Hook.Ic. Pl. vol. xx. (Stapel. Barkl. p. 7.)*

CARALLUMA campanulata; ramis ascendentibus tetraquetris ad $\frac{2}{3}$ poll. diam. pallide viridibus angulis crenatis, crenis foliis minutis serratis instructis, floribus in umbellam terminalem dispositis longiuscule pedicellatis, sepalis lanceolatis subserrulatis, corolla 1 poll. diam. limbo plano velutino nudo saturate rubro-brunneo, lobis late ovatis acutis eciliolatis, corona exteriore 2-partita segmentis falcatis acutis, interioris lobis 5 simplicibus integris v. 3-dentatis antheras incumbentes.

C. campanulata, *N. E. Br. in Gard. Chron.* 1892, ii. p. 369, fig. 61.

Boucerosia campanulata, *Wight Ic. Pl. Ind. Or.* t. 1287.

B. umbellata, *Thwaites Enum. Pl. Zeyl.* p. 209; *Trimen Syst. Cat. Pl. Ceylon*, p. 57.

B. umbellata, var. ? *campanulata*, *Hook. f. Fl. Brit. Ind.* vol. iv. p. 77.

In the Flora of British India, when treating of the species of *Boucerosia*, I found it impossible to describe them and those of *Caralluma* satisfactorily, from the fragmentary specimens in the Herbarium, and I stated that I was dependent for their characters and limitation mainly upon published and unpublished drawings and definitions. In respect of *B. campanulata*, I found that Thwaites, a most competent authority, had included it under *B. umbellata*, not even considering it a variety; but after giving due weight to the observations of Wight, who knew both species, I thought it a safer course to regard it as a variety, giving Wight's characters of the thinner angles of the stem and more tubular corolla which wants the brown base of *umbellata*, to which I added that according to Herbarium specimens the flowers of *campanulata* are smaller and the lobes of the corona narrower. Since that period, now ten years ago, the species of *Boucerosia* and *Caralluma* have been submitted to a searching examination by Mr. N. E. Brown, founded on living specimens, with the result that these two genera must be merged into one,

JANUARY 1ST, 1893.

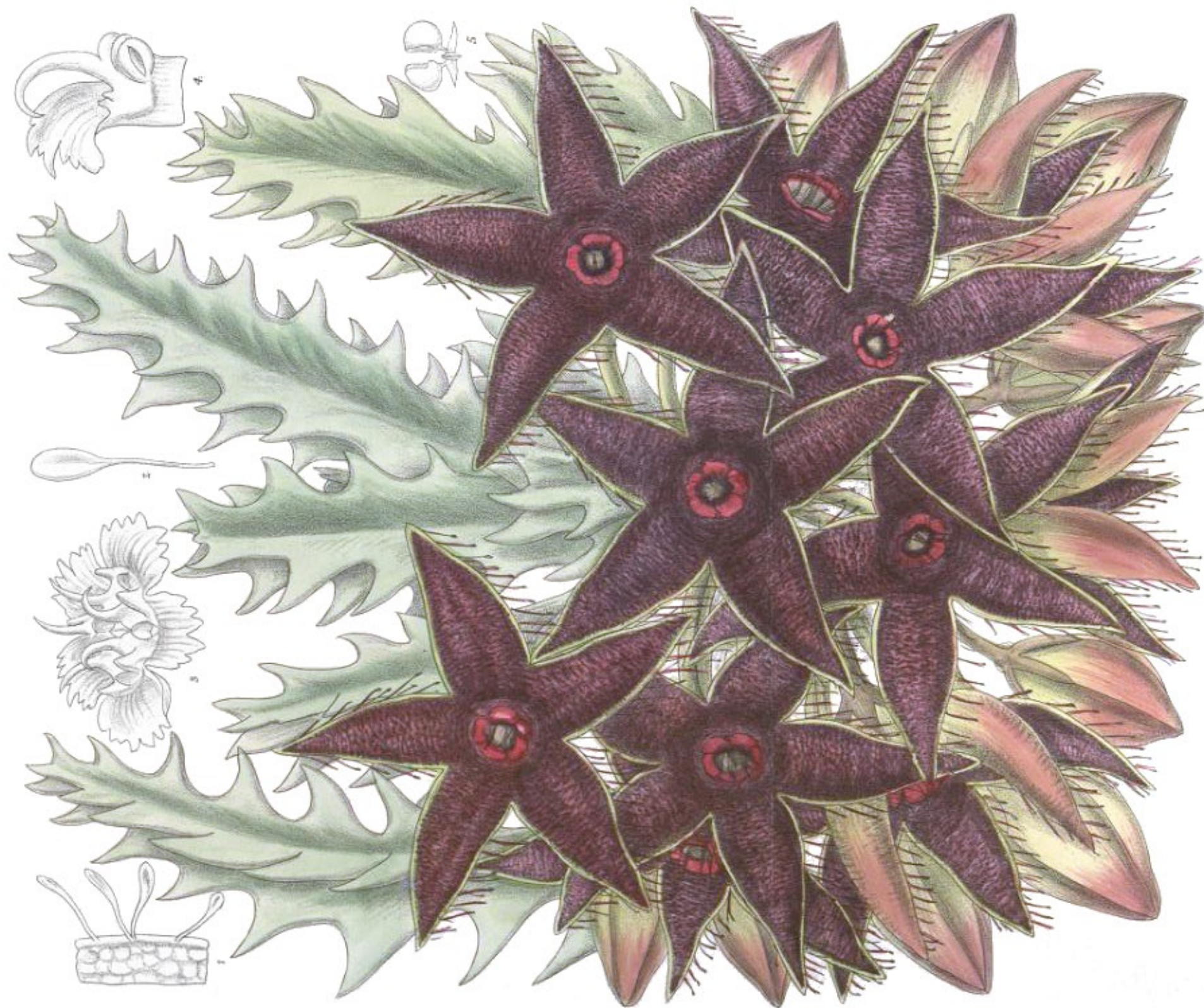


Caralluma, with thirty-eight species. The genus is scattered over an area of the Old World extending from Spain and Northern and Southern Africa to Arabia and Northern and Western India, twelve species being British Indian.

Wight gave no habitat of his *B. campanulata*, nor did he know its origin. His drawing was made from a dried specimen in his Herbarium, now at Kew, and was in all probability received from Ceylon, where (under the name of *umbellata*) Thwaites says it grows on rocks near Korne-galle. It is not known from Continental India.

The plant here figured was received from the Royal Botanic Gardens of Peradeniya in 1890, and flowered in the Succulent House, at Kew, in July, 1892.—*J. D. H.*

Fig. 1, Portion of angle of stem and leaf; 2, calyx; 3, column seen from above; 4, lobe of inner corona; 5, pollinia:—*all greatly enlarged*.



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TAB. 8267.

CARALLUMA NEBROWNII.

German South-west Africa.

ASOLEPIADAEAE. Tribe CEROPEGIEAE.

CARALLUMA, *R. Br.; Benth. et Hook. f. Gen. Plant.* vol. ii. p. 782.

Caralluma Nebrownii, *Berger in Notizbl. Bot. Gart. Berlin*, vol. iv. p. 249; species *C. lateritiae*, N. E. Br., affinis, a qua pedicellis multo longioribus corolla intense atro-kermesina rugosiore et coronae lobis majoribus differt.

Caules succulenti, aphylli, subconferti, erecti, tetragoni, grosse dentati, 8–15 (vel interdum ad 25) cm. alti, 1·8–3 cm. (dentibus exclusis) erassi, glabri, virides vel purpureo-maculati. *Flores* prope basin ramorum fasciculati. *Pedicelli* 4–9 cm. longi, 4–5 mm. crassi, glabri. *Sepala* 7–8 mm. longa, ovato-lanceolata, acuminata, glabra. *Corolla* rotata, 9–11 cm. diametro, extra laevis, rubro-purpurea, intra granulato-rugosa, intense atro-kermesina punctis parvis luteis disco et basi loborum maculata, glabra nisi lobis pilis longis clavatis ad apicem parce ciliatis; discus leviter depressus; lobi 3·6–4·3 cm. longi, 1·7–1·9 cm. lati, lanceolati, acuminati, basi subplani, superne marginibus recurvis. *Corona exterior* cupularis, profunde 5-loba, atrata vel atro-brunnea; lobi 3 mm. longi, 4–5 mm. lati, transverse rectangulari, apice dentati. *Coronae interioris* lobi inaequaliter bicornuti, cum corona exteriori dorsaliter connexi, atro-brunnei, cornubus interioribus 4 mm. longis subulatis erectis apice recurvis, exterioribus 0·5–1·5 mm. longis dentiformibus vel subulatis erectis.—N. E. BROWN.

Caralluma Nebrownii is one of the largest-flowered species in the genus, and is most nearly related to *C. lateritia*, N. E. Br., a native of the northern Kalahari desert, from which the plant now figured differs in having much longer pedicels, a more rugose corolla of a blackish-crimson colour flecked with very small yellowish spots on the disk and at the base of the lobes instead of a uniform brick red; the corona in the present plant is also larger than that of *C. lateritia*. *C. Nebrownii* is allied also to *C. huillensis*, Hiern, an Angolan species, and to *C. lutea*, N. E. Br., a species from South Africa. In both of these plants the pedicels are shorter than in the subject of our plate; *C. huillensis* has moreover pubescent stems, while in *C. lutea* the flowers are yellow and the stems have a different facies.

AUGUST, 1909.

The species now described was discovered by Mr. Dinter near Barmen in German South-west Africa (*Dinter*, n. 1502). Living plants sent by him to the late Sir Thomas Hanbury at La Mortola flowered there in July, 1907, and again in November, 1908, when the specimens from which our drawing was prepared were forwarded to Kew. The plant calls for very dry treatment, more especially in winter, when little or no water should be given to it.

DESCRIPTION.—*Herb*; stems succulent, leafless, somewhat clustered, erect, 4-angled, the angles coarsely toothed, usually 3–6, occasionally 10 in. in height, $\frac{3}{4}$ – $1\frac{1}{4}$ in. thick not including the teeth, glabrous, green or blotched with purple. *Flowers* fascicled near the bases of the branches; pedicels $1\frac{1}{2}$ – $3\frac{1}{2}$ in. long, 2–3 lines thick, glabrous. *Sepals* $\frac{1}{4}$ – $\frac{1}{3}$ in. long, ovate-lanceolate, acuminate, glabrous. *Corolla* rotate, $3\frac{1}{2}$ – $4\frac{1}{2}$ in. across, smooth and reddish-purple outside, within rugose-granular and deep blackish-crimson with some small yellow specks on the disk and at the base of the lobes, sparsely beset with long clavate hairs along the lobes, otherwise glabrous; disk slightly depressed; lobes $1\frac{1}{4}$ – $1\frac{3}{4}$ in. long, $\frac{2}{3}$ – $\frac{3}{4}$ in. across, lanceolate, acuminate, almost flat at the base, with the margins higher up somewhat recurved. *Outer corona* cupular, deeply 5-lobed, blackish or blackish-brown, the lobes $1\frac{1}{2}$ lin. long, 2– $2\frac{1}{2}$ lin. wide, toothed at the tip, transversely rectangular. *Inner corona* with unequally 2-horned lobes, dorsally united to the outer corona, blackish-brown, the inner horns 2 lin. long, subulate, erect and recurved at the tip, the outer under a line long, erect subulate or tooth-like.

Fig. 1, margin of corolla-lobe with four vibratile hairs; 2, a vibratile hair; 3, the entire corona; 4, a stamen, with one of the inner corona-lobes, showing its attachment to a lobe of the outer corona; 5, pollen-masses:—*all enlarged*.

CEROPEGIA BARKLEYI.

Native of South Africa.

Nat. Ord. ASCLEPIADEÆ.—Tribe CEROPEGIÆ,

Genus CEROPEGIA, Linn. (*Benth. et Hook. f. Gen. Plant*, v. ii. p. 779.)

CEROPEGIA *Barkleyi*; rhizomate tuberoso, caule gracili ascendente simpliciusculo glabro v. pilosulo, foliis sessilibus ovato-lanceolatis acuminatis carnosis, pedunculis axillaribus gracilibus paucifloris, floribus 2-pollicaribus. pedicellis apice incrassatis, calycis segmentis acicularibus, corolla tubo curvo basi globoso dein anguste infundibuliformi, ore dilatato, limbi lobis tubo fere æquilongis e basi triangulari filiformibus erectis medio pilosis apicibus horizontaliter incurvis connatis.

This is one of many undescribed species of *Ceropegia* which seem to abound in the dry regions of South Africa. These probably form a conspicuous feature in the flora of regions that are all but desert during a considerable portion of the year, to meet the exigences of which they are provided, some with tuberous rhizomes, others with very succulent leaves, whilst others still have fleshy leafless stems. They differ too remarkably in the structure of the corolla lobes; in the majority of them these are as in the present species slender, erect; spread first outwards and then inwards, finally meeting and cohering by their tips as in most extra-African species; in others they dilate much at the tip, and cohering by broad expansions, form a sort of parachute over the mouth of the corolla, as in *C. Sandersoni*, Tab. 5792, whilst in still others the lobes are free, clawed, and hang down loosely from the throat of the corolla, as in *C. Sororia*, (tab. 5578) and *C. Bowkeri*, (tab. 5407). It would be an interesting study for some South Africa naturalist to ascertain the significance of these three types of corolla, which in all probability represent as many modes of fertilization by insect agency. *Ceropegia Barkleyi* flowered at the Royal Gardens, Kew, in May of the present year, from tubers sent to H. E. Sir Henry Barkly, K.C.B., (late Governor of the Cape Colony), from the

AUGUST 1ST, 1877.



Morley Mission Station in the Transkei District, by Mr. Bowker. It is allied perhaps most nearly to *C. africana*, (Bot. Reg. t. 626).

DESCR. Glabrous or hairy on the stem. *Rootstock* tuberous, fleshy, sending down stout cylindric fibres. *Stem* simple or branched from the very base, slender at first prostrate, then ascending, six inches or a foot or more high, probably at times climbing, cylindric, lower nerves swollen. *Leaves* one to two inches long, opposite, sessile or very shortly petioled, ovate-lanceolated, acuminate, very fleshy, keeled below, bright green with white nerves. *Flowers* in axillary few-flowered racemes; peduncle slender, shorter than the leaves; bracts subulate; pedicels quarter to half inch long, swollen at the apex. *Calyx* segments between subulate and acicular, spreading. *Corolla* nearly two inches long; tube slightly curved, globose at the very base, then narrowly funnel-shaped, glabrous, pale pink, throat not much dilated; limb-segments triangular at the base, then narrowed into filiform processes which are first incurved, then curved slightly outwards with the tips horizontally incurved and cohering; the segments are ciliated about the middle, are pale green externally, and internally reticulated with dark purple. *Outer corona* annular, 10-toothed; inner with rounded lobes.—*J. D. H.*

Fig. 1. Flower and pedicel; 2, corona; 3, pollen masses and caudicle:—*all enlarged.*

CEROPEGIA BOWKERI.

Bowker's Ceropegia.

Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 5306.)

CEROPEGIA *Bowkeri*; erecta glabra, caule tenui ancipiti simplici, foliis anguste linearibus utrinque acutis internodio longioribus, pedunculis axillaribus unifloris vix uncialibus, sepalis anguste linearibus, corollæ tubo tenuiter striato urceolato inferne ventricoso, limbi laciniis tubum æquantibus liberis lato-linearibus plumoso-ciliatis intus villosis (cito arcte reflexis) corollæ stamineæ lobis exterioribus anguste triangularibus margine villosis, interioribus ligulæformibus glabris duplo longioribus. *Harvey.*

CEROPEGIA *Bowkeri*. *Harvey, Thes. Capensis, v. 1. p. 9. t. 14.*

Remarkable as are the flowers of many species of the genus, this is certainly not one of the least peculiar in the structure of its flowers and the colour of its corolla. It is one of the many discoveries in South Africa (Kreili's country, Caffraria) made by Henry Bowker, Esq.; and dried specimens and living tubers were communicated to Dr. Harvey, who published a good figure in his valuable 'Thesaurus Capensis,' l.c. Mr. Bowker's specimens appear to have been preserved when the flowers were not fully developed, and with the segments of the corolla erect; whilst in our living plants the segments are remarkably reflected, so as almost to conceal the tubular portion of the flower. The species flowered, in our Succulent House, in 1863.

DESCR. *Root* a rather depresso-globose *tuber*, from the crown of which arises a very short *stem*, which soon (near the base) divides into a few erect, slender, simple, subcompressed *branches*, giving the appearance of undivided stems a span to a foot high. *Leaves* in rather distant opposite pairs, two to three inches long, one to two lines wide, linear-subacute, sessile, becoming smaller upwards. From the axils of the pairs of upper leaves, a short *peduncle*, less than an inch long, bears a single flower. *Calyx*

OCTOBER 1ST, 1863.



of five, linear-subulate, pale-green *sepals*, spotted with brown. *Corolla* an inch and a half long (including the reflexed limb), pale yellowish-green. *Tube* cylindrical, dilated and globose at the base, and again at the summit, which is brown, and where five subglobose spurs are formed. *Segments* of the *corolla* as long as the tube, linear-oblong, puckered on the surface and hairy above, beautifully fringed at the margin, soon strongly reflected on the tube. *Outer lobes* of the *staminal crown* broad, subulate, villous at the margin, a little spreading; *inner* one of five, erect, narrow-linear, elongated lobes.



Fig. 1. Entire flower. 2. Calyx and staminal crown. 3. Pollen-masses:—*magnified*.



CEROPEGIA CUMINGIANA.

Mr. Cuming's Ceropegia.

Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA DIGYNIA.

Gen. Char. Calyx 5-partitus. Corolla tubulosa, basi magis minusve ventricosa, subinfundibuliformis, limbo laciniis compressis, ligulatis, erectis, sæpius arcuatis apiceque cohærentibus, haud rare ciliolatis; præfloratione valvata. Corona staminea duplici serie campanulata v. rotata, 5–10–15-lobata, lobis antheris antepositis sæpius longioribus, ligulatis, apice sæpissime approximatis conniventibus. Antheræ apice simplices, membrana destitutæ. Massæ pollinis erectæ, rotundatæ, margine interiori pellucidæ. Stigma muticum. Folliculi cylindraeci, læves, pergamacei. Semina comosa.—Suffrutices v. potius herbæ perennes Indicæ v. Africanæ, radice bulbosa, erectæ carnosæ aphyllæ v. sæpius volubiles foliosæ; foliis haud raro carnosulis; floribus paucis aggregatis v. subcorymbosis, virenlibus purpureo-violaceo-maculatis, v. rarius concoloribus lutescentibus. DC.

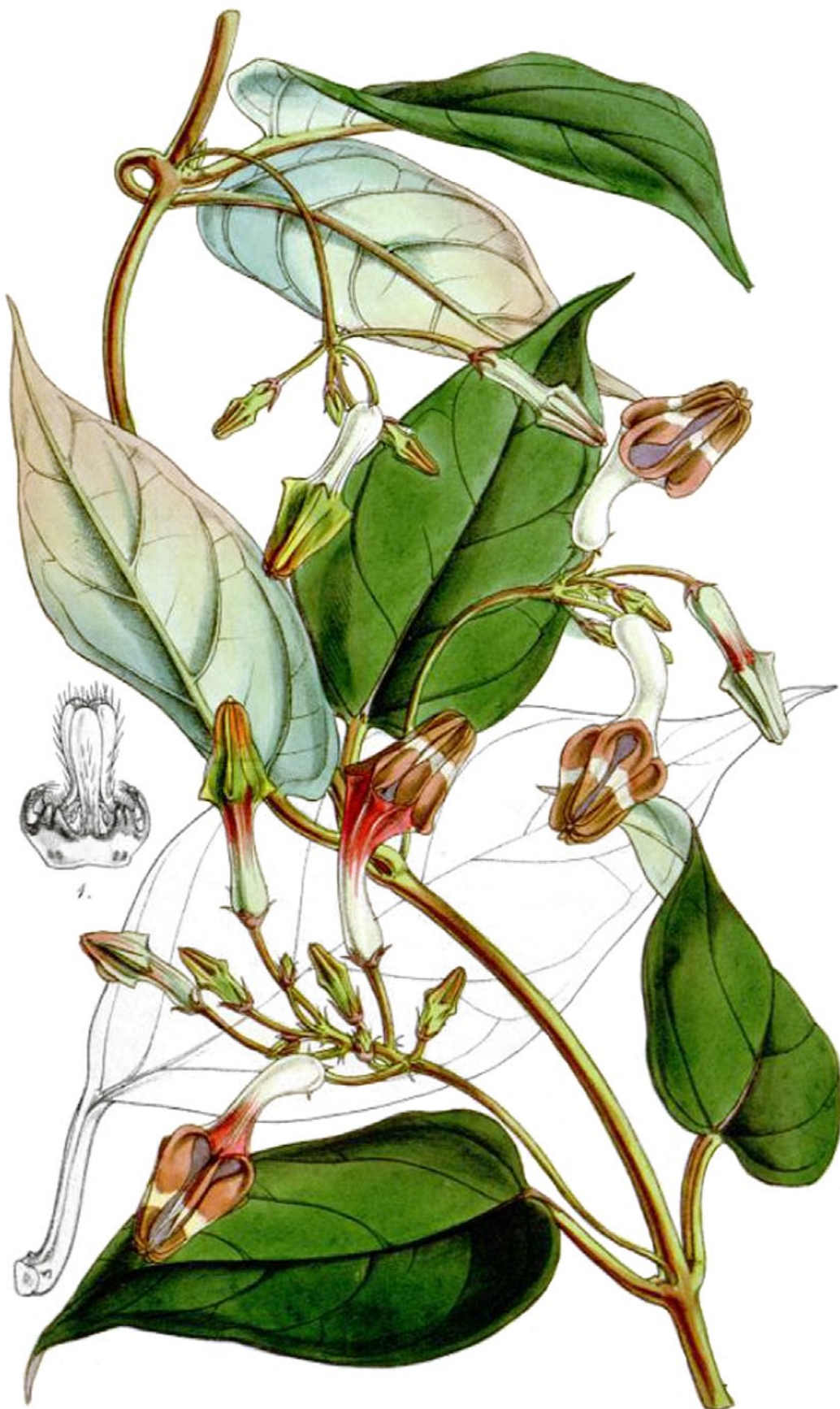
CEROPEGIA *Cumingiana*; volubilis glabra, foliis ovatis basi subcordatis apice longe attenuatis acutis tenuibus, pedunculis folium medium æquantibus plurifloris, sepalis acutis, corollæ tubo clavato, limbi laciniis oblongis glabris apice cohærentibus, coronæ stam. pilosæ fol. extern. brevibus bifidis inter. ligulato-clavatis exteriora multo superantibus conniventibus.

CEROPEGIA *Cumingiana*. Dcne, in De Cand. Prodr. v. 8. p. 643. Cuming, Herb. Philipp. n. 447.

Received from Java, by Messrs. Veitch and Sons, through their Collector, Mr. Thos. Lobb. This is clearly the same plant with Mr. Cuming's No. 447, from Manilla, quite agreeing with his specimens in my Herbarium. The discrepancies in the description of the staminal crown of the flower, by M. Decaisne, and that drawn up by me, may be accounted for from the alteration in that part of a fleshy flower by drying and pressure. A stove plant, flowering in August with Mr. Veitch.

DESCR. A glabrous, climbing and twining plant, with terete, rounded stems, tinged with red. Leaves opposite, on rather long, flexuose petioles, ovato-acuminate, somewhat membranaceous, cordate at the base, often tinged with brown and with the costa red. Peduncle reaching about as far as the middle of the leaf, terminated by a cyme of eight to ten flowers. Pedicels with subulate bractæas at the base. Calyx deeply five-partite:

JANUARY 1ST, 1848.



segments subulate, spreading. *Corolla* one and a half to two inches long: the *tube* contracted in the middle, cream-coloured, the *limb* chocolate purple, with a pale transverse band; the segments connivent, large. *Staminal crown* double; exterior of five short, obtuse, double, slightly incurved teeth; interior of as many elongated, clavato-ligulate ones, connivent, three or four times as long as the outer: all pilose.

Fig. 1. Staminal crown:—*magnified*.

ADDITIONS TO THE “HORTUS KEWENSIS.”

1. CEROPEGIA CUMINGIANA.

Volubilis glabra, foliis ovatis basi cordatis apice longe attenuatis acutis tenuibus, pedunculis folium medium æquantibus plurifloris, sepalis acutis, corolla tubo clavato, limbi laciniis oblongis glabris apice cohærentibus, corona stam. ampla, fol. externe acuminatis approximatis glabris, interior. subulatis exterior. vix duplo superantibus.—*Decaisne in De Cand. Prodr.* vol. viii. p. 643.

HAB. Philippine Islands, *Cuming*, n. 447. Island of Bella, in the Java Sound, *Thos. Lobb. Cult. in Hort. Veitch*, 1847.

A very pretty climber and free flowerer, from the collection of Messrs. Veitch and Sons, in whose stove, at Exeter, it bloomed in August, 1847. The flowers are among the largest of the genus, and variegated with dull green and reddish brown.

(3015)

CEROPEGIA ELEGANS. BEAUTIFUL
CEROPEGIA.

Class and Order.

PENTANDRIA DIGYNIA.

(Nat. Ord.—ASCLEPIADEÆ. Br.)

Generic Character.

Corona staminea exterior abbreviata, 5-loba; interior 5-phylla, foliolis ligularibus indivisis. *Massæ pollinis* basi affixæ, marginibus simplicibus. *Stigma* muticum. *Folliculi* cylindraci, læves. *Semina* comosa. *Br.*

Specific Character and Synonym.

CEROPEGIA* *elegans*; volubilis lævis, radice fibrosis foliis oblongis acutis, pedunculis axillaribus 1- vel 2-floris, corollæ tubo clavato incurvo basi inflato-ventricoso, limbo hemispherico, laciniis ligulatis longè ciliatis; lobis coronæ stamineæ exterioris profundè 2-partitis. *Wall. MSS.*

CEROPEGIA *elegans*. *Wall. MSS.*

DESCR. The whole plant smooth, somewhat fleshy, climbing to a considerable extent. *Root* consisting of many filiform fibres, without any tubers. *Branches* numerous, long, and slender. *Leaves* opposite, remote, spreading, oblong acute, or ending in a short acumen, about three inches long, dark-green and shining above, pallid underneath, with elevated ribs, and capillary, distant nerves, which unite near the margins by of means arcuate veins; supported

supported on cylindrical, curve, furrowed footstalks, which conceal within their axils a few of the minute, subulate, fleshy bodies, which belong to the family of ASCLEPIADEÆ. *Peduncles* axillary, solitary, thickish, round, shorter than the petioles, one or two-flowered. *Flowers* large, inodorous, of a purple colour, speckled with green, on slender, half-inch long, partial *peduncles*, each of which has at its base one or two small, linear, purplish bracteas. *Corolla* deeply five-cleft, closely pressed to the enlarged base of the corolla; *laciniæ* spreading, linear-subulate. *Corolla* nearly an inch and a half long; *tube* club-shaped, curved, much swelled and ventricose at the base, widening again at the upper end into the large, round, slightly depressed, five-cleft *border*; *laciniæ* tongue-shaped, acute, bent inwardly, and connected by their apices, having between them large and wide interstices; their sides are bent backwards so as to become contiguous, and the margins furnished with a row of long, black, shining, straight, loose and vacillating hairs; the inside of the border is dark purple. *Organs of fructification* very small, concealed in the bottom of the corolla, and surrounded with a double corona; the outer one five-cleft, or, rather, ten-cleft, in consequence of the five lobes, which are linear-subulate, and converge over the inner corona, being deeply two-cleft; inner corona five-cleft, lobes subulate, rather obtuse, undivided, opposite to those of the outer corona. *Anthers* fleshy, clavate, naked, bilocular; the cells being large, membrane-rmargined. *Pollen-masses* ovate, obtuse, erect, connected in pairs by means of a very short pedicel to the apex of a small, brown, sulcate corpusculum. *Stigma* indistinctly five-cornered, depressed, with an obscurely two-lobed, central prominence. WALL. MSS.

The Company's Botanic Garden of Calcutta is indebted to the Venerable Archdeacon HAWTAYNE of Bombay for this ornamental plant, which is one of the most elegant of the Genus to which it belongs. It was discovered on the Nilghiry range, and forwarded to the garden in 1824; where it blossoms profusely in the beginning of every year. A living plant was brought to England by Dr. WALLICH, in 1828, which was presented by the Hon. Court of Directors of the East India Company to His Majesty's garden at Kew, where it is now in full flower.

Fig. 1. Calyx and Pistil. 2. The double Corona Staminea. 3. The inner ditto. 4. Portion of the outer and inner Crown, with two Pollen-masses, and the angular Stigma. 5. Pollen-masses. 6. Pistils.—*Magnified*.

TAB. 8066.
CEROPEGIA FUSCA.
Grand Canary.

ASCLEPIADACEÆ.

CEROPEGIA, Linn.; *Benth. et Hook. f. Gen. Plant.* vol. ii. p. 779.

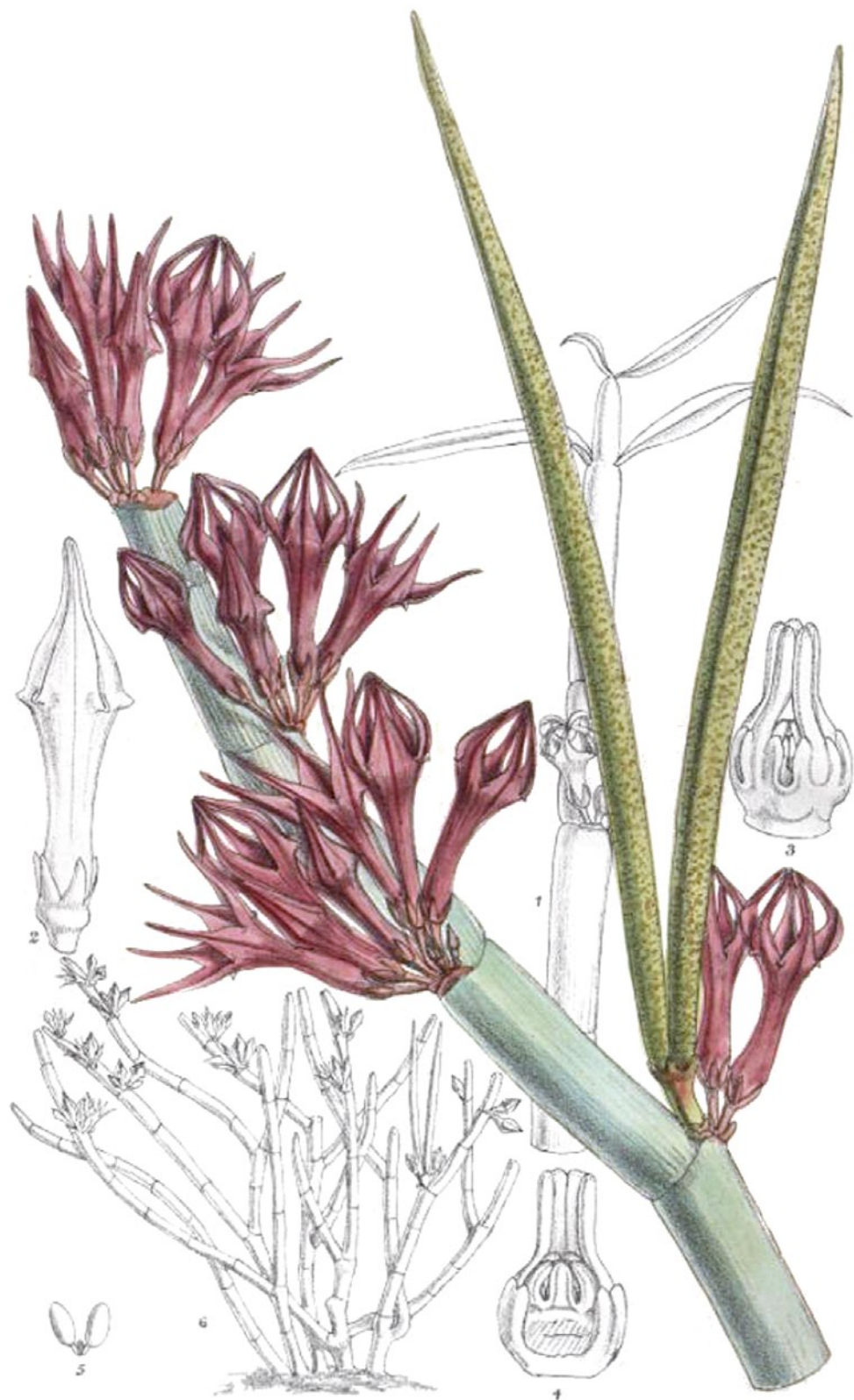
Ceropegia fusca, *C. Bolle in Bonplandia*, vol. ix. (1861), p. 51; affinis *C. dichotomæ*, a qua caulibus crassioribus albidis et floribus rubro-brunneis differt.

Planta succulenta, e basi ramosa, subaphylla. Caules vel rami $1\frac{1}{2}$ –6 ped. longi, 6–9 lin. crassi, cylindrici, articulati, glabri, albidi. *Folia* paucissima, $\frac{3}{4}$ – $1\frac{1}{2}$ poll. longa, 1–2 lin. lata, lineari-lanceolata, acuminata. *Flores* ad nodos fasciculati, erecti, breviter pedicellati. *Sepala* 1 lin. longa, deltoideo-attenuata, glabra. *Corolla* $1\frac{1}{3}$ poll. longa, extra glabra, rubro-brunnea; tubus 10–11 lin. longus, inferne leviter inflatus, superne infundibularis, intra parce hirtus, albidus; lobi 7 lin. longi, e basi deltoideo-lanceolata $2\frac{1}{2}$ lin. lata lineari-attenuati, apice connati vel demum liberi. *Corona* lutea, glabra: lobi exteriores $\frac{1}{2}$ lin. longi, breviter bifidi, lobi interioribus adnati; lobi interiores 1 lin. longi, filiformes, erecti, conniventes. *Folliculi* 6– $6\frac{1}{2}$ poll. longi, $\frac{1}{4}$ poll. crassi, erecti, teretes, superne attenuati, obtusi, glabri, olivacei, fusco-punctati.

The odd-looking plant here figured bears so little resemblance, in its stems and habit, to the majority of the species of *Ceropegia*, that when out of flower it might easily be mistaken for a *Euphorbia*. The only other species of *Ceropegia* with which it can be compared is the nearly allied *C. dichotoma*, which is also a native of the Canaries, and *C. stapelioides*, a native of South Africa, both of which have long been in cultivation.

C. fusca is a native of Grand Canary, where it was originally discovered by Carl Bolle about the year 1860. Since that time it does not appear to have been collected, and nothing more was known of it until 1904, when Mr. Walter Ledger, of Wimbledon, who is much interested in this genus, was instrumental in its rediscovery. He furnished Mr. Alaricus Delmard, a botanist resident in the Canary Islands, with its recorded habitat, and that gentleman soon succeeded in finding this interesting species, and early in 1905 sent the living plant, here figured, to Kew, where it flowered in June. Mr. Ledger writes that, according to Mr. Delmard, the goats have nearly exterminated the plant in its native locality. It

MARCH 1ST, 1906.



grows in a dry district, and requires similar treatment to that given to *C. stapeliæformis*.

DESCR.—A bushy succulent, with many stems from the base, almost leafless. *Stems* erect, and about a foot and a half high, but according to Mr. Delmard sometimes six feet, simple or repeatedly forked, half to three-quarters of an inch thick, jointed, cylindric, glabrous, whitish. *Leaves* very few, only occasionally developed, three-quarters to one inch and a half long, linear-lanceolate, acuminate, dark green. *Flowers* in fascicles at the nodes, produced for two or more years in succession, erect. *Bracts* minute, deltoid-ovate, acute, glabrous. *Pedicels* a sixth of an inch long, glabrous. *Sepals* very small, acute, glabrous. *Corolla* about an inch and a third long, dull reddish-brown, glabrous outside; lobes and mouth of the tube glabrous within, with a faint purple bloom; tube thinly hairy inside, and white or very pale yellowish, nearly an inch long, a sixth of an inch in diameter at the swollen base, slightly bent and cylindric above, widening into a funnel-shaped mouth; lobes above half an inch long, deltoid-lanceolate, tapering into slender, linear tails, at first connate at the tips, sometimes more or less free and spreading. *Corona* light yellow; outer lobes very short, adnate to the base of the inner lobes subquadrate, shortly bifid, glabrous, inner lobes twice as long, filiform, connivent at the base over the anthers and style-apex, glabrous. *Follicles* about six inches long, a quarter of an inch thick, terete, tapering from about the middle to a blunt point, glabrous, light olive-green, speckled with brown.—N. E. BROWN.

Fig. 1, apex of a young stem with leaves, from Mr. Delmard's drawing; 2, flower-bud; 3, corona; 4, corona with one lobe removed and the side ones pushed back a little to show the anthers, which are opposite the corona-lobes; 5, pollen-masses:—figs. 2–5, *enlarged*.

ERRATUM.

Tab. 8058. In lines 23 and 28 of description, for *F. scardica* read *S. scardica*.

CEROPEGIA GARDNERI.

Mr. Gardner's Ceropeyia.

Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA DIGYNIA.

Gen. Char. Calyx quinquepartitus. Corolla tubulosa, basi magis minusve ventricosa, subinfundibuliformis; limbi laciniis compressis, ligulatis, erectis, sæpius arcuatis apiceque cohærentibus, haud raro ciliolatis; præfloratione valvata. Corona staminea duplici serie campanulata vel rotata, 5–15-lobata; lobis antheris antepositis sæpius longioribus, ligulatis, apice sæpissime approximatis, conniventibus. Antheræ apice simplices, membrana destitute. Massæ pollinis erectæ, rotundatæ, margine interiore pellucide. Stigma muticum. Folliculi cylindracei, læves, pergamacei. Semina comosa.—Suffrutices vel potius herbæ perennes, Indicæ. De Cand.

CEROPEGIA *Gardneri*; volubilis glabra, foliis lanceolatis acuminatis, pedunculis petiolo subæquilongis paucifloris, calycis lobis linearibus, corolla ad tubi basin parum inflata supra medium subito valde ampliata apice aperte 5-crurmenata margine ciliata, coronæ stamineæ lobis exterioribus linearibus acutis, interioribus multo longioribus latioribusque et apice reflexis, folliculis longiusculis teretibus. *Thw.*

CEROPEGIA *Gardneri*. *Thwaites, Enum. Plant. Zeyl. p. 199.*

A native of Ceylon, introduced by the Messrs. Veitch and Sons to their Nurseries at Exeter and Chelsea, and undoubtedly the *C. Gardneri* of our friend Mr. Thwaites's valuable 'Enumeratio,' above quoted. It was first detected by Mr. Gardner (whose name it bears), at Rambaddo, at an elevation of from 4000 to 5000 feet, and it well deserves a place in our collections. Mr. Thwaites aptly compares it with the *Ceropegia elegans* of Wallich, from the Nilgherries, figured at our Tab. 3015 of this work; but a slight glance at that figure will serve to justify Mr. Thwaites in his further remark, that "it can scarcely be a variety of it." It is indeed infinitely more ornamental than that, with larger leaves and larger flowers, twice the size of those of *elegans*. In the state of the bud there is a most striking difference when the lobes of the corolla are folded in, in a very remarkable manner, so as to present five spreading lobes like the lobes of a starfish, or still more like the expanded corolla of a *Stapelia*. Then again, in the fully-developed corolla (we can hardly say *expanded*,

APRIL 1ST, 1862.



for the lobes continue to adhere at the apices), the inflected segments take a broad heart-shaped form, the sides near the apex being reflected and forming the only opening into the tube. The colour is much brighter, and the hairs, so very abundant and conspicuous in *elegans* on the corolline lobes, are here few and very indistinct.

Fig. 1. The staminal crown. 2. The pistils:—magnified.





(3300)

CEROPEGIA LUSHII. MR. LUSH'S CEROPEGIA

Class and Order.

PENTANDRIA DIGYNIA.

(Nat. Ord.—ASCLEPIADEÆ.)

Generic Character.

Calyx 5-partitus. *Corolla* basi ventricoso tubo infundibuliformi, limbi laciniis coniventibus ligulatis. *Corona staminea* duplex (?); interioris foliolis lobis exterioris opposita. *Antheræ* apice simplices. *Folliculi* cylindranei, læves. *Semina* comosa.—Suffrutices *vel* Herbæ volubiles. *Wight.*

Specific Character and Synonyms.

CEROPEGIA *Lushii*; volubilis, glabra, foliis lineari-acuminatis carnosius canaliculatis, corollæ tubo basi inflato-globoso, limbi 5-fido laciniis linearibus hirsutis approximatis, lobis coronæ stamineæ, exterioris lunulato-emarginatis interioribus alternantibus, interioris elongatis cylindraceo-filiformibus erectis flexuosis exteriori multo longioribus.

CEROPEGIA *Lushii*. *Graham in Ed. New Phil. Journ. ined.*

The Genus CEROPEGIA is peculiar to the East Indies, and is remarkable for the peculiar shape of the flowers, frequently arranged in umbels, hence its name *κηροπηγιον*, a candelabrum, or lamp-stand. Many of them are possessed of considerable beauty, and highly ornamental to the bushy and uncultivated places where they grow. The species too are esculent, and used by the natives either raw or stewed in curries. Of one species, *C. bulbosa*, the root resembles a small turnip, no less in appearance than in flavor, according to Dr. ROXBURGH; and its leaves taste like purslane. The present species is certainly among the least beautiful, and was communicated from Bombay by Mr. LUSH to the Edinburgh

burgh Botanic Garden, where it flowered in October last. Dr. WIGHT has pointed out its great affinity, especially in the structure of the flowers, with the *C. acuminata* (ROXB. Corom. v. 1. t. 8.); the chief difference being in the leaves; here narrow, thick, and fleshy, exhibiting no trace of veins; there broader, not fleshy, and out lateral veins from the costa.

DESCR. Whole plant slightly glaucous. *Stems* and branches slender, twining. *Leaves* opposite, linear and acuminate, two to four inches long, sessile, fleshy, with a furrow on the upper side. *Flowers* in pedunculated, axillary *umbels*, shorter than the leaves, each of three to four flowers. *Calyx* of five deep, linear segments. *Corolla* yellow-green, tinged with purple, the tube much inflated, the *limb* of five, linear, erect, and connivent segments, deep purple and hairy within. *Organs of fructification* on a short stipes, which supports a double crown: outer of five patent, lanceolate, fleshy segments, alternating with the five inner ones, which are much elongated, cylindrical, or filiform, erect, flexuose, diverging upwards.

Fig. 1. Flower. 2. Column of fructification.

Dr. WIGHT has requested me to correct the following errors in the description of *CEROPEGIA Wightii* at folio 3267 of this Magazine. At the beginning of the third paragraph, the words "exterior" and "interior" are transposed; it should have been stated that the interior lobes are twice as long as the exterior.—In the Generic Character, line first, for "*lobo*" read "*tubo*."

CEROPEGIA MONTEIROÆ.

Native of Delagoa Bay.

Nat. Ord. ASCLEPIADÆÆ.—Tribe CEROPEGIÆÆ.

Genus CEROPEGIA, Linn.; (*Benth. et Hook. f. Gen. Pl. vol. ii. p. 779.*)

CEROPEGIA *Monteiroæ*; glaberrima, caule volubili, foliis carnosulis breviter petiolatis ovato-oblongis obtusis margine undulatis, floribus ad apicem pedunculi crassi paucis erectis breviter crasse pedicellatis, sepalis parvis lanceolatis, corolla $2\frac{1}{2}$ –3 pollicari, tubo basi oblongo-inflato dein anguste infundibulari, lobis abrupte in laminam inflexam basi ciliatam horizontalem dilatatis laminibus in umbraculam convexam albam purpurco-maculatam 5-sulcatam connatis, coronæ stamineæ lobis exterioribus nullis, interioribus elongatis incurvis in columnam 5-sulcatam conniventibus apicibus recurvis obtusis.

Those who frequent the Succulent House at Kew have long been familiar with the *Ceropegia Sandersoniæ* (Bot. MAG. t. 5792), which, growing in a pot, was trained up a rafter on the left-hand side on entering, and which attracts attention by its curious long green flowers, expanding into the form of a trumpet, surmounted by a fringed green spotted canopy, supported on five short legs. No second species at all like it of the extensive genus to which it belongs was ever known till 1884, when the tubers of that here figured were sent to the Royal Gardens by Mrs. Monteiro, of Delagoa Bay, widow of that able naturalist J. Monteiro, the author of the best books ever written on the Natural History of Tropical Africa.*

C. Sandersoniæ, just referred to, is a native of Natal, and was named in honour of a lady who, and whose husband (the late J. Sanderson, Esq.), were active contributors to the Royal Gardens. It seems, therefore, appropriate that its near ally should bear the name of the lady to whom the horticultural world is indebted for this singular plant.

C. Monteiroæ was received in 1884, and flowered in July, 1886. It comes from Delagoa Bay, a locality a good way

* "Angola and the River Congo," by Joachim J. Monteiro. 2 vols. Macmillan & Co. 1875.

MARCH 1ST, 1887.



M.S. del. J.N. Fitch lith.

Vincent Brooks Day & Son imp.

L. Reeve & Co. London.

north of Natal, and the plant consequently requires tropical heat, which *C. Sandersoniæ* does not.

DESCR. A glabrous climber, probably attaining a considerable height; branches terete, as thick as a goose-quill, white mottled with brown, in minutely warted patches. *Leaves* opposite, two to three inches long, shortly stoutly petioled, oblong-ovate, subacute or obtuse, succulent, pale green with undulate margins that are purplish on the extreme edges. *Flowers* about three, at the top of short stout lateral peduncles one-half to two-thirds of an inch long, shortly pedicelled; bracts minute. *Sepals* small, erect, lanceolate, acute, glandular at the base within. *Corolla* two to three inches long; inflated base narrowly oblong, green, about two-thirds of an inch long; tuber above the bulb narrowly funnel-shaped, dull green below, striped white and dull brown above; mouth trumpet-shaped; lobes five, clawed, claws separated by a semicircular sinus, each lobe suddenly dilated into a broad triangular flat plate that arches over the mouth of the corolla, white spotted with purple brown, and with purple filaments at the base on each side; these five coalesce, and form a low, pointed, five-angled, five-furrowed canopy over the opening of the corolla, supported by the five claws. *Column* at the base of the bulb; outer lobes none, the inner arching inward and meeting form a five-grooved column, above which three short free recurved obtuse tips spread outwards.—J. D. H.

Fig. 1, Portion of stem; 2, sepal seen from within; 3, base of corolla and staminal column; 4, pollen-masses:—*all enlarged*.



W. Fitch del.

Pub. by S. Curtis Glasnevin, Dublin, June 1844

Super D.

(4093)

CEROPÉGIA OculÁTA. OCELLATED
CEROPEGIA.

Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—ASCLEPIADEÆ.)

Generic Character.

Calyx 5-partitus. *Corolla* tubulosa, basi magis minusve ventricosa, subinfundibuliformis, limbi laciniis compressis, ligulatis, erectis, sæpius arcuatis apiceque cohærentibus, haud raro ciliolatis; prefloratione valvata. *Corona staminea* duplici serie campanulata vel rotata, 5—10—15-lobata, lobis antheris antepositis sæpius longioribus, ligulatis, apice sapissime approximatis conniventibus. *Antheræ* apice simplices, membrana destitutæ. *Massæ pollinis* erectæ, rotundatæ, margine interiori pellucidæ. *Stigma* muticum. *Folliculi* cylindracei, læves, pergamacei. *Semina* comosa.—Suffrutices vel potius Herbæ perennes Indicæ vel Africanæ, radice bulbosa, erectæ, carnosæ, aphyllæ vel sæpius volubiles, foliosæ; foliis haud raro carnosulis; floribus paucis aggregatis vel subcorymbosis, virentibus purpureo- vel violaceo-maculatis vel rarius concoloribus lutescentibus. D C.

Specific Name and Character.

CEROPEGIA *oculata*; caule herbaceo volubili glabro, foliis cordato-ovatis acuminatis hirsutuliciliatis basi glandulosis, pedunculis patenti-hirsutis 4—6-floris, corolla tubo basi valde inflato globoso limbo latiore, limbi segmentis oblongis erecto-conniventibus ciliatis inferne luteis nigro-oculatis superne intense viridibus, lobis coronæ stamineæ exterioris attenuatis emarginatis, interioris anguste linearibus rectis strictis integerrimis.

Raised in the stove of the Royal Botanic Gardens, Kew, from seeds sent from Bombay, by Miss JONES. It is extremely

extremely handsome, and very curious, as are the CEROPEGIAS in general, in the structure of the flowers, which, in this case, represent the head of a snake with a green snout, and eye-like spots above the neck, or narrow part of the tube. It is in many respects allied to our *C. vincæfolia* from the same country, but the flowers are larger and handsomer; the corollas having a much more inflated base free from spots, a very differently marked limb, and a different form of the corona staminea. It is a ready growing plant, flourishing in a good heat, and it produces its flowers in September.

DESCR. *Stem* twining, slender, herbaceous, terete, glabrous. *Leaves* opposite, ovato-cordate, acuminate, slightly hairy and ciliated, with about four, erect, subulate, fleshy glands at the base above the leaf-stalk. *Peduncles* axillary, purple, clothed with spreading hairs, and bearing an umbel of from four to six, singularly shaped, and singularly coloured *flowers*: the *pedicels* have subulate *bracteas* at their base. *Calyx* of five, deep, subulate segments. *Corolla* two inches long: *tube* pale yellow-green, remarkably inflated, and globose at the base, so much so that this is the widest part of the flower, contracted and elongated in the middle, spotted upwards, then again expanding and bearing five segments, which are oblong, broader at the base, erect, connivent, and coherent at the apices one with another; the base yellowish, with large eye-like spots, the upper portion dark green. *Corona* double orange-yellow; outer one cut into five, erecto-patent, acuminate but emarginate lobes, bearing each three blood-colored spots on the back; inner of five, erect and straight, connivent, narrow-linear segments, thrice as long as the outer ones.

Fig. 1. Double Corona.—*magnified*.

CEROPEGIA SANDERSONI.

Mr. Sanderson's Ceropegia.

Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA MONOGYNIA.

Gen. Char. (Vide supra, TAB. 5306.)

CEROPEGIA Sandersoni; glaberrima, caulibus robustis elongatis volubilibus, foliis crasse petiolatis ovatis v. ovato-cordatis subacutis obtusisve carnosiss, pedunculis brevibus crassis paucifloris, bracteolis parvis ovatis acutis, calycis lobis ovato-lanceolatis acuminatis, corolla albo-viridi magna ampla, tubo basi modice inflato curvo sursum valde ampliato late infundibuliformi translucido, lobis remotis in laminam horizontalem basi 2-lobam ciliatam dilatatis, laminibus in umbraculam latissimam 5-lobam 5-sulcatam connatis, coronæ staminæ lobis exterioribus 0, interioribus elongatis erectis apicibus recurvis.

CEROPEGIA Sandersoni, Decaisne in litt.

This very striking and conspicuous-flowered plant, was discovered in July, 1867, by our active and able correspondent, John Sanderson, Esq., of Natal, in the Bush on the banks of a stream flowing into the Umgeni river in a stony soil; and by him a sketch was in the following year sent both to myself and to my friend M. Decaisne, who provisionally gave it the above name,—a richly-deserved compliment to its excellent and liberal discoverer. In 1868 live specimens were transmitted in a Ward's case by Mr. Sanderson to Kew, and these having gone on flowering abundantly, from the month of May till the present time, enable me to figure it here. In habit *C. Sandersoni* differs altogether from its congeners, as it does in its stout stem like that of a *Vanilla*, its succulent leaves, and the remarkable structure and colour of its semi-transparent flower capped by the curious broad lobed hood of mottled green, which bears near the margin a series of erect white flat hair-like processes.

SEPTEMBER 1ST, 1869.



DESCR. A lofty glabrous climber. *Stems* stout, succulent, as thick as a goosequill, twining, and sparingly branched. *Leaves* small and distant for the size of the plant, shortly stoutly petioled, one and a half to two and a half inches long, ovate-cordate, obtuse, thick and succulent, nerveless, deep green like the stems. *Peduncles* axillary, short, curved, stout, terete, bright green, three- to four-flowered. *Bracteoles* small, subulate. *Pedicels* short. *Calyx-lobes* subulate, quarter of an inch long, green. *Corolla* two and a half inches long, curved at the base, two inches broad across the top; tube slightly inflated and green at the base, expanding into a funnel-shaped, five-angled, transparent limb, with opaque green reticulated veins; this presents five short distant lobes on its margin, which bears the five curious horizontal appendages that together form the umbraculiform cap to the flower: this cap is bright verdigris-green, pitted on the surface and formed of five confluent convex lobes with a conical central papilla, each lobe is two-lobed at its outer margin, and the margins are turned up and bear a series of transparent flat erect hairs within the border. *Staminal corona* yellow, terminating in five erect strap-shaped connivent processes with recurved apices.—*J. D. H.*

Fig. 1, Staminal corona; 2, pollini:—*both magnified.*

CEROPEGIA SORORIA.

Kaffrarian Ceropogia.

Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA MONOGYNIA.

Gen. Char. (*Vide supra*, TAB. 5306.)

CEROPEGIA *sororia*; volubilis, glabra, caule tenui, foliis anguste linearibus utrinque acutis internodiis longioribus, pedunculis axillaribus unifloris elongatis, sepalis lineari-subulatis, corollæ tubo glabro elongato, parte inferiore inflata elongata oblonga, parte superiore inferiore æquilonga cylindrica, lobis partem superiorem tubi æquantibus pendulis lineari-oblongis acutis ciliatis, coronæ staminæ lobis exterioribus subulatis longe ciliatis, interioribus elongatis glabris.

CEROPEGIA *sororia*. Harvey, mss.

In the eighty-ninth volume of this work a very remarkable South African species of this genus is figured,—*C. Bowkeri*, Tab. 5407,—partaking very much of the character of this in the singular pendulous lobes of the corolla, which move with the faintest breeze, and probably are intimately connected with the function of impregnation, though how does not appear. Like many South African plants, it has large tuberous roots, though I cannot say whether, like its above-named congener, it is erect in its native country and becomes a twiner in our damper climate, having no indigenous specimen at hand to judge from. The specimen here figured was flowered by Dr. Moore, of Glasnevin, in May, 1865, from seeds sent by Mrs. F. W. Barber, from Kaffraria, and named by Dr. Harvey, who is engaged in working up the *Asclepiadææ* for the Cape Flora. Its name, *sororia* (*sisterly*), alludes to its kinship with *C. Bowkeri*, Miss Bowker (now Mrs. Barber) having sent both species to Dr. Harvey. It has also been found by Zeyher in the Albany district.

DESCR. A slender, glabrous, rather glaucous, branching climber, with almost filiform stems and branches and long internodes. *Leaves* four to seven inches long, very narrow,



linear-lanceolate, not half an inch broad, dark-green above, glaucous beneath. *Peduncles* axillary, solitary, about as long as the internodes, one-flowered. *Flowers* an inch and a half to two inches long, pale-green, the reflexed lobes of the corolla darker green, with a double row of transverse purple bars above, pink beneath. *Calyx-lobes* linear-subulate, not half the length of the swollen base of the corolla; *tube of the corolla* consisting of a narrow inflated lower and cylindrical upper portion of equal length, glabrous; *lobes* as long as the upper portion, linear-oblong, acute, villous and ciliated, keeled down the middle with reflexed sides. *J. D. H.*

Fig. 1. Calyx and crown of anthers, etc. 2. Pollen-masses:—*both magnified.*



3567

(3567)

CEROPEGIA STAPELIIFORMIS. STAPELIA-LIKE
CEROPEGIA.

Class and Order.

PENTANDRIA DIGYNIA.

(Nat. Ord.—ASCLEPIADEÆ.)

Generic Character.

Corona staminea exterior abbreviata, 5-loba; interior 5-phylla, foliolis ligularibus indivisis. *Massæ pollinis* basi affixæ, marginibus simplicibus. *Stigma* muticum. *Folliculi* cylindracei, læves. *Semina* comosa. *Br.*

Specific Name and Character.

CEROPEGIA *stapeliiformis*; volubilis? aphylla ramosa, ramis teretibus dentibus mollibus spiniformibus subverticillatis, floribus 1—2 e ramis propriis brevibus, corolla limbo intus hirsuto-tomentoso laciniis liberis recurvis carinatis, lobis coronæ stamineæ exterioris brevibus emarginatis, interioris elongatis filiformibus.

CEROPEGIA *stapeliiformis*. *Hort. Kew.*

This remarkable plant is probably a native of the East Indies, and was received at the Glasgow Botanic Garden from the Royal Gardens of Kew, with the appropriate name here adopted. It flowers in the stove in April.

DESCR. *Stem*, in our plant, about the thickness of one's finger, full of a milky juice, rounded, glabrous, of a dark lurid green colour, glabrous, marked with soft, spiniform processes, three in a whorl, each with two little pots from within which the branches arise, these are long, slender, apparently climbing, of a dark purple colour, and have the soft, spine-like teeth above mentioned alternate and whorled. *Flowers* one to two from short branches. *Peduncle*

two

two to three lines long, thickened upwards. *Calyx* five-partite, the segments subulate. *Corolla* two inches long; *tube* curved, swelling below, and constricted just above the base, greenish-white, spotted above and below with deep purple: the *tube* expanded upwards to form the *limb*, which is cut into five segments, dark purple without and glabrous, white and hairy within, they soon separate, and are curved backwards, the sides are closely reflexed, so that the upper side presents a sharp keel, giving a very singular appearance to the blossom. *Staminal crown* with the exterior lobes short, erect, or slightly patent, emarginate, inner elongated, erecto-connivent, filiform.

Fig. 1. Staminal Crown:—*magnified*.

TAB. 8458.

CEROPEGIA THORNCROFTII.

Transvaal.

ASCLEPIADACEAE. Tribe CEROPEGIEAE.

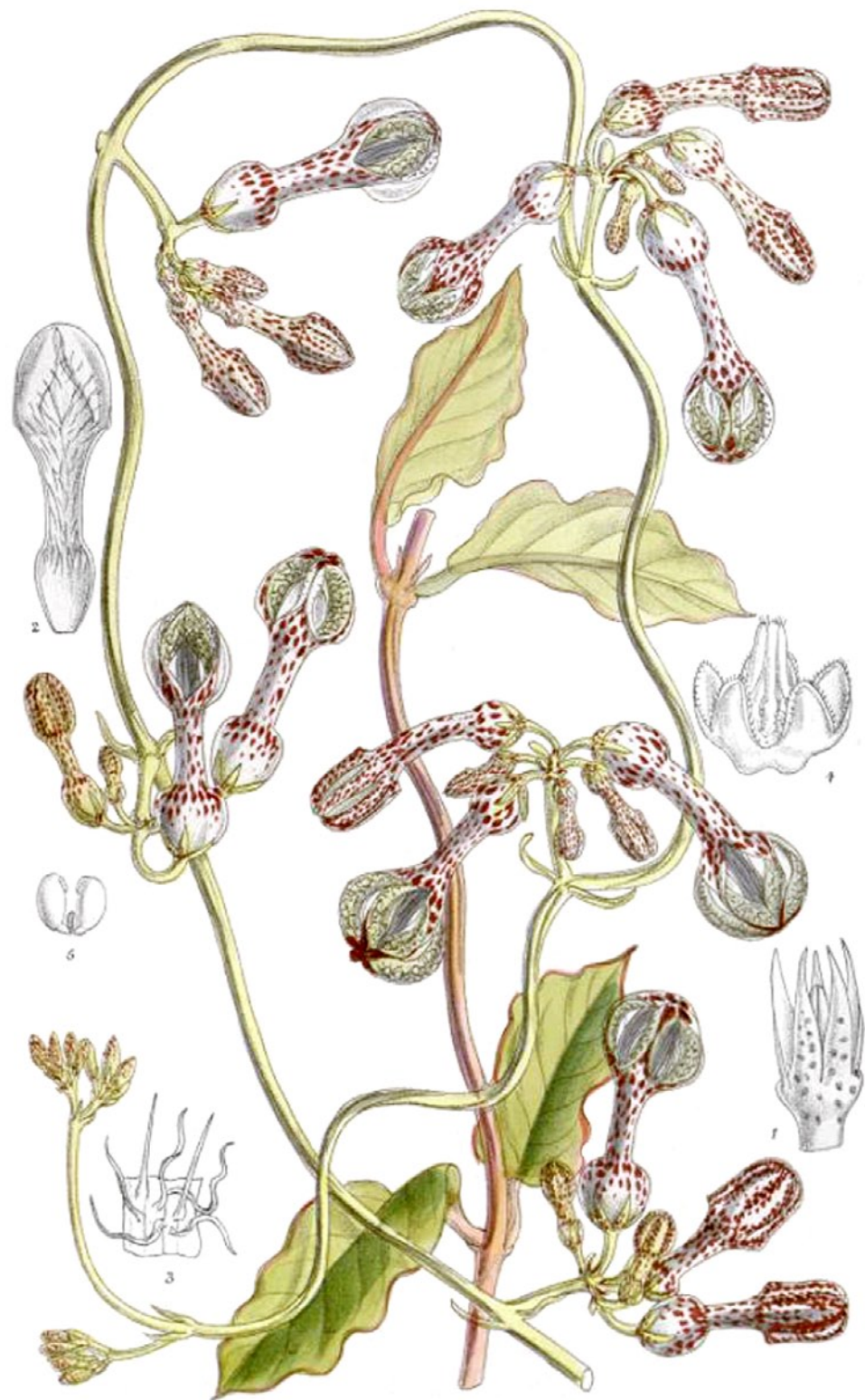
CEROPEGIA, Linn.; Benth et Hook. f. *Gen. Plant.* vol. ii. p. 779.

Ceropegia Thornecroftii, N. E. Brown; species nova affinis *C. crispatae*, N. E. Br., sed floribus multo minoribus lobis brevioribus et intra gibboso-carinatis differt.

Herba perennis, volubilis. *Radices* fasciculatae, carnosae, 10–14 mm. crassae, albae. *Caulis* 3–4 mm. crassus, glaber. *Folia* opposita, subcarnosa, glabra, viridia; petioli 6–10 mm. longi, 2–3 mm. crassi; laminae 2·5–5·5 cm. longae, 1·2–4 cm. latae, ovatae vel elliptico-ovatae, acutae, basi rotundatae vel late cuneatae, marginibus undulatis et plus minusve crispatis. *Cymae* axillares, pedunculatae, multiflorae; pedunculi 1·5–1·7 cm. longi, 2 mm. crassi, glabri. *Bractae* minutae, 1–3 mm. longae, deltoideo-subulatae. *Sepala* 3–4 mm. longa, subulata, basi dilatata, glabra, purpureo-punctata. *Corolla* alba, purpureo-maculata, extra glabra; tubus 2·5 cm. longus, curvatus, intus pilosus, basi ellipsoideo-inflatus et 8 mm. diametro, superne 3 mm. diametro, cylindricus, fauce infundibuliformis et 8 mm. diametro; lobi 9–10 mm. longi, erecto-incurvati, apice connati, lineari-oblongi marginibus reflexis, intus ad medium gibboso-carinati et glabri, inferne parce pilosi. *Coronae exterioris* lobi adscendentes, 1 mm. longi, oblongi, subtruncati vel obtusi, fusco-purpureo-marginati, minute ciliati. *Coronae interioris* lobi 2 mm. longi, lineares, conniventes, subcohaerentes, fusco-purpurei, glabri. —N. E. BROWN.

The *Ceropegia* which forms the subject of our illustration is a native of the Transvaal, where it was discovered in the neighbourhood of Barberton by Mr. G. Thornecroft, to whom also horticulture is indebted for its introduction to European collections. Plants were sent by Mr. Thornecroft to the Botanic Garden, Cambridge, where it was flowered for the first time in August, 1911, by Mr. Lynch, to whom we are indebted for the material on which our figure has been based. When it flowered it was found to be an undescribed species and has been named in honour of its discoverer. *C. Thornecroftii* closely resembles *C. crispata*, N. E. Br., not only in its habit and as regards its foliage, but also in having a cluster of thick fleshy roots instead of a tuber. But while it is nearly allied to *C. crispata*, *C. Thornecroftii* differs markedly from that species in having much smaller flowers characterised by the gibbous projection at the middle of the keel on the inner side of the

OCTOBER, 1912.



lobes, of which there is no trace in *C. crispata*. Mr. Lynch informs us that *C. Thorncroftii* requires the usual treatment under ordinary tropical conditions of the other species of the genus except that in winter it appears to demand a rather higher temperature than the majority, and to prefer a greater degree of dryness. It has done well in the Stove, but has not succeeded in the Cactus House. The masses of fleshy roots appear to be sensitive to any excess of moisture, especially if associated with too low a temperature.

DESCRIPTION.—*Herb*, twining, perennial; roots white, clustered, fleshy, $\frac{1}{3}$ in. thick; stem about $\frac{1}{8}$ – $\frac{1}{6}$ in. thick, glabrous. *Leaves* opposite, somewhat fleshy, glabrous, green, ovate or elliptic-ovate, acute, base rounded or wide-cuneate, margin undulate and more or less crispate, 1–2 $\frac{1}{4}$ in. long, $\frac{1}{2}$ –1 $\frac{3}{4}$ in. wide; petiole 3–5 lin. long, stout. *Cymes* axillary, peduncled, many-flowered; peduncles about $\frac{2}{3}$ in. long, 1 lin. thick, glabrous; bracts minute, deltoid-subulate. *Sepals* about $\frac{1}{6}$ in. long, subulate, wide-based, glabrous, dotted with purple. *Corolla* white with purple blotches, glabrous outside; tube 1 in. long, curved, pilose within, with an inflated ellipsoid base $\frac{1}{3}$ in. across, above cylindric and only 1 $\frac{1}{2}$ lin. wide, the throat funnel-shaped $\frac{1}{3}$ in. across; lobes over $\frac{1}{3}$ in. long, erect then incurved, their tips connate, linear-oblong with reflexed edges, within gibbously keeled and glabrous at the middle, sparingly pilose below the middle. *Outer corona* with ascending oblong subtruncate or obtuse lobes $\frac{1}{2}$ lin. long, which are finely ciliate and have dark-purple margins. *Inner corona* with linear, conniving, somewhat cohering dark-purple glabrous lobes 1 lin. long.

Fig. 1, calyx; 2, vertical section of corolla; 3, hairs from inner surface of corolla; 4, corona; 5, pollen-masses:—*all enlarged*.

TAB. 4758.

CEROPEGIA THWAITESII.

Mr. Thwaites's Ceropogia.

Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA DIGYNIA.

Gen. Char. (Vide supra, TAB. 4349.)

CEROPEGIA *Thwaitesii*; volubilis glabra, foliis petiolatis cordato-ovatis acuminatis, racemis 3–5-floris folio longioribus, sepalis subulatis, corollæ tubo infundibuliformi basi inflato-globoso, limbi laciniis oblongis glabris coherentibus coronæ stamineæ foliolis externis bipartitis laciniis subulatis pilosis, interioribus lineari-spathulatis erectis glabris exteriora duplo superantibus.

Apparently a new species of the singular genus *Ceropogia*, seeds of which were received at Kew, from Ceylon, send by our friend Mr. Thwaites, in 1851. The plants flowered in September, 1853, and exhibit many points in common with *C. Cumingiana*, Dcne., figured at our Tab. 4349. The chief difference, as may be expected, lies in the flower: here the corolla being very contracted near the middle of the tube, and at base singularly and suddenly inflated; the markings and colour of the corolla too, are very different, as is the form of the staminal crown.

DESCR. The whole length of the *plant* before us is between two and three feet, moderately branched; *branches* glabrous, terete, climbing. *Leaves* opposite, on rather long *petioles*, ovate, acuminate, submembranaceous, glabrous, or only slightly ciliated at the margin, penninerved, entire, the *nerves* prominent beneath and the colour paler there. Young *stem* and foliage often tinged with red. *Petioles* nearly an inch long, terete. *Peduncles* axillary, about as long as the *petiole*, and bearing an umbellate raceme of three to five *flowers*, which are moderately large, two inches and more long, handsomely marked. *Calyx* of five, subulate, green *sepals*, tipped with red, half as long as the globose

JANUARY 1ST, 1854.

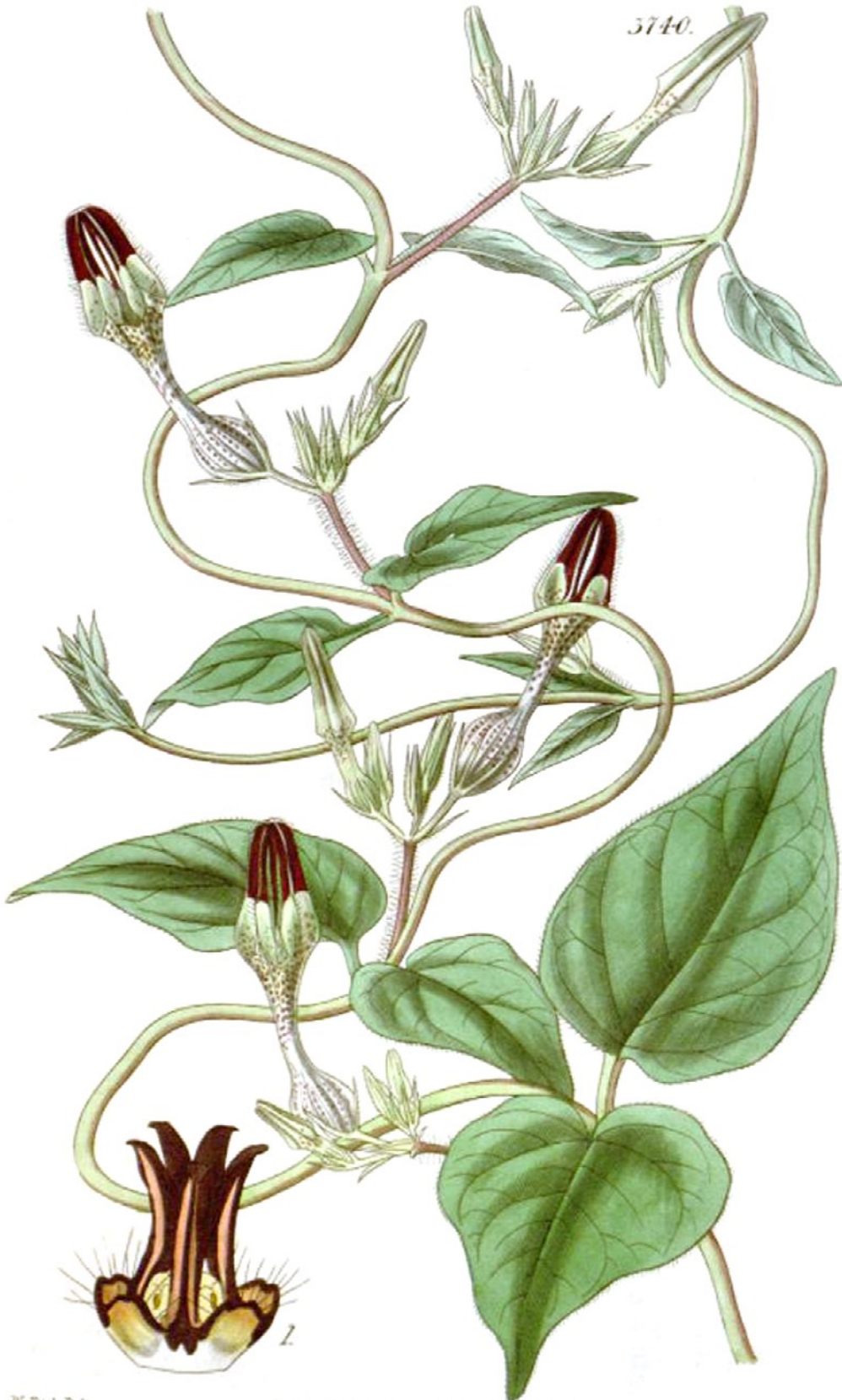


base of the corolla. *Corolla* with the *tube* yellow, infundibuliform, very narrow below the middle, much inflated and almost globose at the base, dilated upwards, and there sprinkled with dark blood-red spots. *Limb* of five, oblong-ovate, obtuse *segments*, which are erecto-connivent into a cone, concave or grooved lack, yellow, with a transverse band of dark brown, almost black-purple above the middle, the tips green: *staminal crown* cup-shaped, fleshy; external *folioles* five, erect, bifid, the segments subulate, villous with long hairs; interior of five, erect, linear-spathulate, glabrous ones, twice as long as the outer.



Fig. 1. Corona staminea:—*magnified*.





W. Fitch. Del.

Printed by S. Curtis, Manchester, Eng., July 1, 1859.

Fig. 3740.

(3740)

CEROPEGIA VINCÆFOLIA. PERIWINKLE-
LEAVED CEROPEGIA.

Class and Order.

PENTANDRIA DIGYNIA.

(Nat. Ord.—ASCLEPIADEÆ.)

Generic Character.

Corona staminea exterior abbreviata, 5-loba; interior 5-phylla, foliolis ligularibus indivisis. *Massæ pollinis* basi affixæ, marginibus simplicibus. *Stigma* muticum. *Folliculi* cylindranei laves. *Semina* comosa. *Br.*

Specific Name and Character.

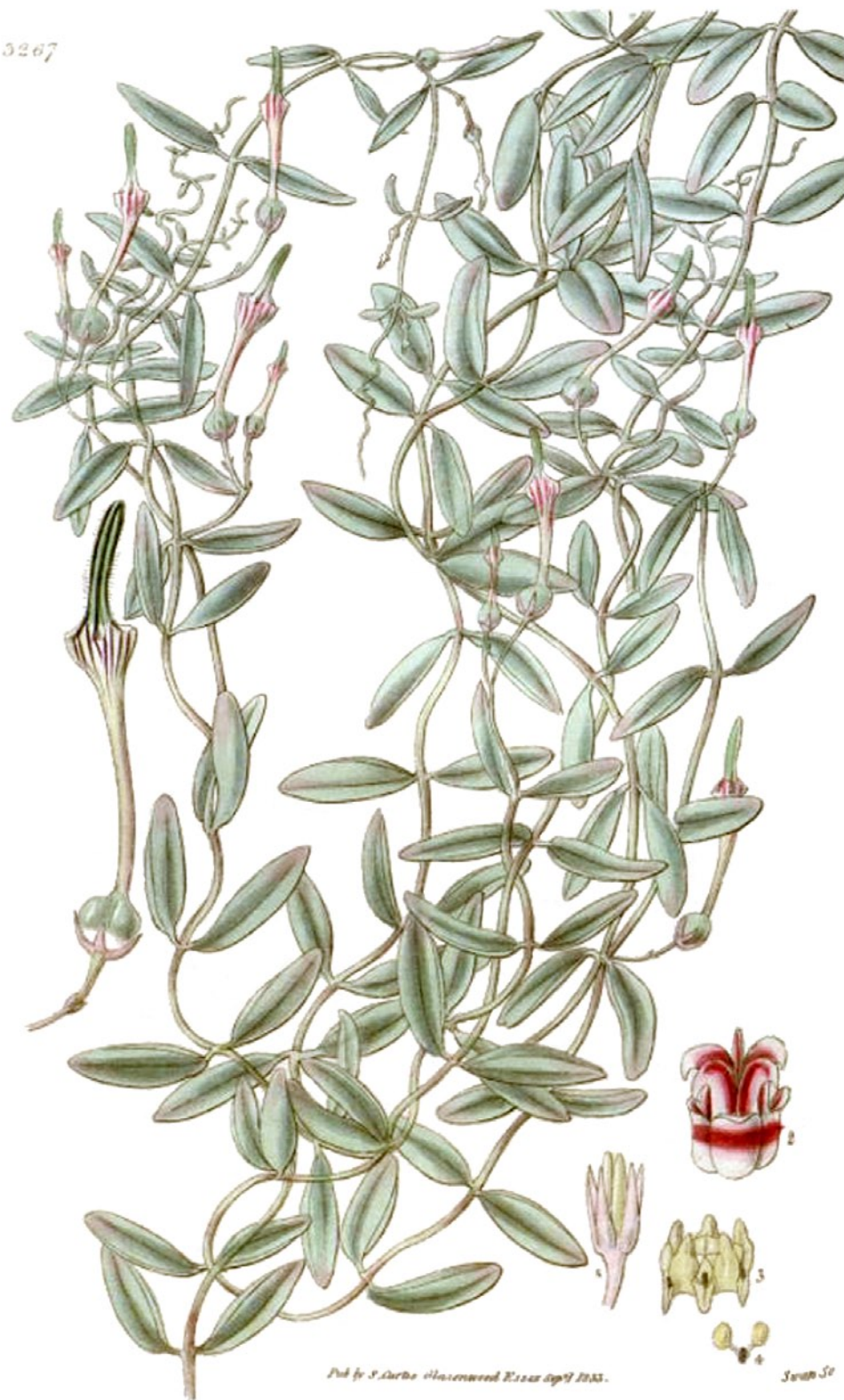
CEROPEGIA *vincæfolia*; volubilis pubescens, foliis late ovatis acuminatis brevi-petiolatis, pedunculis patenti-hirsutis 4—6-floris, corollæ tubo brevi inflato-globoso superne dilatato, limbi segmentis oblongis erecto-conniventibus intus hirsutis, lobis coronæ stamineæ exterioris brevibus emarginatis, interioris linearibus erectis apice recurvis subemarginatis.

Received from Bombay at the Glasgow Botanic Garden, by favor of J. NIMMO, Esq. It is an extremely handsome plant, with large and copious flowers, which are produced in the stove in the month of September. I do not find any described species that corresponds with it.

DESCR. *Stem* very long, the thickness of a crow-quill, twining, slightly downy, branched. *Leaves* opposite, ovate, generally broadly so, acuminate, slightly downy above and below, ciliated at the margin: *petioles* rather short and thick. *Peduncles* an inch or more long, clothed with patent hairs, bearing a *cyme* of from four to six *flowers*. *Calyx-segments* and *bractæas* subulate. *Corolla* greenish-white, variously sheathed and spotted with brown, the upper part

part of the segments of the limb deep brownish-purple: the tube inflated and globose below, dilated above: the limb of five erecto-connivent, oblong segments, internally hairy, the margins reflexed. *Column* varied with tawny and deep chocolate-brown, outer series or ray of five short, erecto-patent, emarginate, fleshy lobes, tipped with long hairs : inner of five erect, linear, compressed segments, the apex recurved and obscurely emarginate.

Fig. 1. Column:—*magnified*.



Pub. by S. Curtis. Coloured from a drawing by H. B. S.

Scam 50

(3267)

CEROPEGIA WIGHTII. DR. WIGHT'S
CEROPEGIA.

Class and Order.

PENTANDRIA DIGYNIA.

(Nat. Ord.—ASCLEPIADEÆ.)

Generic Character.

Calyx 5-partitus. *Corolla* basi ventricosa, lobo infundibuliformi, limbi laciniis conniventibus ligulatis. *Corona staminea* duplex (?): *interioris foliola* lobis exterioris opposita. *Antheræ* apice simplices. *Stigma* muticum. *Folliculi* cylindranei laeves. *Semina* comosa.—Suffrutices vel herbæ volubiles. *Wight*.

Specific Character and Synonym.

CEROPEGIA *Wightii*; volubilis glaber, radice bulbosa, foliis ovatis acutis carnosis, corolla tubo basi inflato-globoso limbi 5-fido laciniis linearibus lanuginosis approximatis, lobis corona stamineæ exterioris integris interioribus alternantibus, interioris carnosus lateraliter compressis albidis recurvis exteriori duplo longioribus. *Wight*.

CEROPEGIA *Wightii*. *Graham MSS.*

DESCR. The whole plant glabrous, twining, fleshy. *Root* bulbous. *Leaves* opposite, ovate, acute, succulent, about an inch long, three or four lines broad, and often nearly as thick. *Umbels* lateral, few-flowered. *Calyx* five-parted, laciniae acute. *Corolla* about an inch long; tube slender, globular at the base, widening at the border, five-cleft; laciniae approximated for their whole length, narrow, linear, purple, (or dark green, H.) densely woolly. Organs of *fructification* concealed in the inflated part of the tube, and surrounded by the *Corona*, the exterior lobes of which are ovate, entire, and alternate with the interior; these latter are erect, somewhat fleshy, about twice the length of the exterior series, laterally compressed, white, (stained with deep rose-colour) and from about the middle upwards curved

curved outwards, presenting a star-like appearance. Anthers obtuse, naked at the apex, two-celled: *Pollen-masses* erect, attached by the base. *Stigma* blunt. *Wight*.

This very distinct species of *CEROPEGIA* flowered this summer (1833) in the Edinburgh Botanic Garden, where it had been received from the East Indies, under the name of *C. bulbosa*. It agrees with that species in having a tuberous root, a twining, succulent stem, in the leaves, and in the form of the corolla; but is at once distinguished by the corona, which equally separates it from every other species with which I am acquainted. I would take this opportunity of calling the attention of Botanists to the form of that organ, as affording the most permanent characters for distinguishing allied species in this Genus.—In some, its interior lobes are very long, while the exterior are reduced to a narrow margin, and these appear opposite the interior, as in *C. bulbosa*, *acuminata*, and *tuberosa*, ROXB., and in another East Indian species in my Herbarium.—A second set has the exterior series in five distinct, ovate, entire, or two-cleft lobes, alternate with the interior, the interior ones more than twice their length, and hooked outwards at the point. To this section, belong *C. juncea*, ROXB. *C. Wightii*, perhaps *C. Lunda* WALL. Pl. Rarior. and two undescribed species in my Herbarium.—In a third set, all the lobes are ligulate, the exterior double the number of the interior, and nearly equalling them in length. To this section belong *C. elegans*, WALL. in Bot. Mag. and two unpublished species in my Herbarium.—A fourth set has the interior lobes long and the exterior double their number, ovate, obtuse, and scarcely the length of the column of fructification. To this section belong one unpublished species from Nepaul, (*C. Wallichii*) WIGHT in Herb. Royle, and perhaps *C. longifolia*, WALL. Pl. Rar.

In all these, the exterior lobes are at least twice as long as the interior.—In the fifth section, the interior lobes barely exceed the column of fructification, and are about one half longer than the exterior. To this section belong two unpublished species in my Herbarium. These are all that I had an opportunity of examining with reference to that point.—The species so grouped, often differ very widely in other respects, thereby producing some very unnatural combinations.

In these remarks, I have employed the terms *exterior* and *interior* series of lobes of the corona, from supposing that the terms *outer* and *inner corona* used by Dr. BROWN in his character of the Genus (in the Wern. Trans.) imply the presence of a double series of parts, or two verticils, a structure which does not, I think, exist. The coronal appendage is apparently a campanulate organ, often resembling in form, the limb of the corolla, the ligulate divisions of which represent the interior series of lobes, while the intermediate, ventricose portions represent the exterior. Taking this view of its structure, I infer, that the organ is composed of a single verticil of five leaves, the lamina of which are more or less united, while the costæ are each prolonged into an acumen. The acumen forms the inner lobes, while the lamina more or less developed, form the outer series. If this be correct, it would appear that the corona of *CEROPEGIA*, and perhaps of the whole Order ASCLEPIADEÆ is analogous to the antheriferous tribe of MELIACEÆ, and may form a link between these otherwise very distant Orders. *R. Wight*.

TAB. 7704.
CEROPEGIA WOODII.
Native of Natal.

Nat. Ord. ASCLEPIADEÆ.—Tribe CEROPEGIÆ.

Genus CEROPEGIA, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. ii. p. 779.)

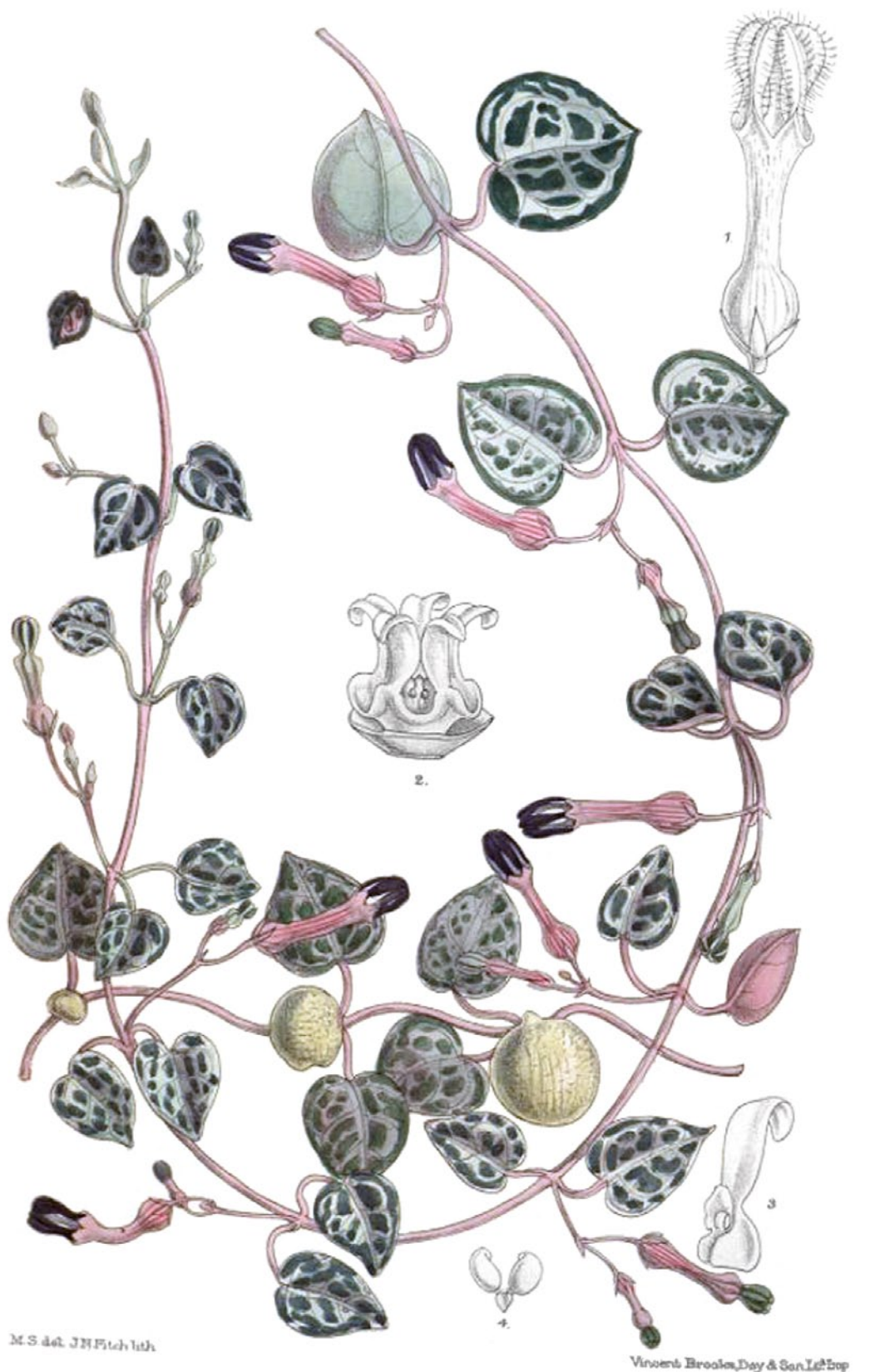
CEROPEGIA Woodii; herba tuberosa, glabra, ramis gracillimis decumbentibus vel pendentibus ad nodos sæpe tuberiferis, foliis petiolatis $\frac{1}{3}$ –1 poll. longis et latis late cordato-ovatis vel orbiculari-reniformibus acutis vel obtusis carnosius supra albo-venosis, cymis axillaribus pedunculatis 2–3-floris, pedicellis 3–3½ lin. longis, sepalis $\frac{3}{4}$ lin. longis lineari-lanceolatis acutis, corollæ tubo 7–9 lin. longo basi globoso-inflato superne cylindrico ore leviter infundibuliformi rubro-purpureo lineato, lobia erectis apice co-hærentibus angustis replicatis ciliatis atro-purpureis, coronæ exterioris breviter cupuliformis lobuli integris, coronæ interioris lobis linearibus vel lineari-lanceolatis apice recurvis acutis.

C. Woodii, Schlechter in *Engl. Bot. Jahrb.* vol. xviii., Beibl. No. 45, p. 34; and vol. xx., Beibl. No. 51, p. 49. *Gard. Chron.* 1897, vol. ii. pp. 357, 358, fig. 104.

This pretty species of *Ceropegia* was discovered by Mr. J. Medley Wood, the energetic Curator of Durban Botanic Gardens, in February, 1881, hanging from rocks on Groen Berg, Natal, at an altitude of about one thousand eight hundred feet. In 1894 Mr. Wood sent a living plant of it to Kew, and subsequently it has been introduced into other establishments. It seems to be nearest allied to *C. africana*, Br., and *C. Barkleyi*, Hook. f. (*Bot. Mag.* t. 6315), but is a much more slender and more elegant plant than either of these. It is admirably adapted for basket culture, as it produces a profusion of slender stems which hang gracefully down on all sides, and are well furnished with small variegated leaves. It flowers freely, and ripens fruit under cultivation. The accompanying figure was made from plants cultivated in the Botanic Garden at Cambridge, and in the Royal Gardens, Kew. It flowers under cultivation from February to November.

DESCR.—Glabrous in all parts except the corolla. *Root-stock* tuberous, fleshy. *Stems* numerous, pendent, or trailing on the ground, slender, often producing globose tubers at the nodes. *Leaves* opposite, fleshy, one-third of

MARCH 1ST, 1900.



an inch to one inch long, and as much in breadth, on petioles two to six lines long, varying from broadly cordate-ovate to orbicular-reniform, acute or obtuse, apiculate, dark green, reticulate, variegated with white above, pale green beneath. *Cymes* axillary, pedunculate, two- or three-flowered. *Peduncle* two to five lines long. *Bracts* minute. *Pedicels* about a quarter of an inch long. *Sepals* three-quarters of a line long, linear-lanceolate, acute. *Corolla* slightly curved; tube seven to nine lines long, globosely inflated at the base, cylindric above, slightly dilated into a funnel-shaped mouth at the apex, streaked with purple; lobes three to three and a half lines long, erect, cohering at the tips, narrowly spathulate from a deltoid base, replicate, blackish-purple, ciliate with purple hairs. *Outer corona* shortly cupular, with five short, obtuse, pocket-like lobules, white. *Inner coronal-lobes* linear or linear-lanceolate, acute, connivent-erect, recurving at the apex, adnate at the base to the outer corona, white.—N. E. *Brown*.

Fig. 1, corolla; 2, corona; 3, one of the inner coronal-lobes attached to a stamen; 4, pollen-masses:—*All enlarged*.

COTYLEDON CRENATA. SCOLLOP-LEAVED
NAVEL-WORT.

Class and Order.

DECANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus (modo 4-fidus). *Cor.* 1-petala. *Squamæ* nectariferæ 5, ad basin germinis. *Capf.* 5 (modo 4).

Specific Character and Synonyms.

COTYLEDON *crenata*; foliis decussatis obtusis crenatis carnofis, floribus cymoso-paniculatis erectis quadrifidis. *Venten. Malmaif.* 49. *Hort. Kew. ed. alt. v. 3. p. 110.*

VEREA *crenata*; foliis oppositis patentibus, racemis longissimis laxis, floribus luteis. *Bot. Repos.* 21. *Willd. Sp. Pl.* 2. p. 471.

CALANCHOE *Verea*. *Persoon Syn.* 1. p. 446. a.

KALANCHOE. *Adanson Fam. de Pl.* 2. p. 548.



Sp. Pl. Kew. Del.

Pub. by J. Curtis. Walworth Jan 1816

F. C. G. G. R.

This succulent thrub, native of Sierra Leone, whence it was introduced by our friend Professor ADAM AFZELIUS, and, under the supposition of its being an undescribed genus, was named by Mr. ANDREWS in honour of JAMES VERE, Esq. a great encourager of botanical science. But if it can be properly separated from COTYLEDON, being undoubtedly a congener of COTYLEDON *laciniata*, of which ADANSON, in his Familles des Plantes, long ago constituted a genus, it must take his name of KALANCHÖE. DECANDOLLE, a French botanist, and PERSOON, have adopted this division; but M. VENTENAT has followed LINNÆUS, who considered his COTYLEDON *laciniata* as belonging to the genus, though curtailed of one-fifth in the number of all the parts of fructification.

It

It is not improbable, however, that had he known there were half a dozen species in the same predicament, he would have himself made a separation, so congenial with his classification.

In the new edition of the Hortus Kewensis, both this plant and BRYOPHYLLUM of SALISBURY, No. 1409 of this work, are retained with COTYLEDON; BRYOPHYLLUM is, however, in our opinion, very distinct, not only in the number of the parts of fructification, but likewise in the form of the corolla, the relative proportion of the calyx and it, and especially in having the stamens arranged in one rank.

The original imported plant bore leaves many times the size of those in our figure, and more irregularly scolloped, but succeeding ones have not attained to the same vigorous growth.

Our drawing was made at the late Right Honourable Mr. GREVILLE's, at Paddington. Propagated by cuttings. Requires to be kept in the dry stove, or in an airy part of the common hot-house. Flowers from May through the summer. Cultivated by Mr. WILLIAM ANDERSON, in 1793.

N2044

(2044)

COTYLEDON CURVIFLORA. BENT-FLOWERED
NAVELWORT.

Class and Order.

DECANDRIA PENTAYNIA.

Generic Character.

Cal. 5-fidus. *Cor.* 1-petala. *Squamæ* nectariferæ 5, ad basin germinis. *Caps.* 5.

Specific Character.

COTYLEDON *curviflora*; fruticosa, foliis semicylindricis sparsis, floribus paniculatis nutantibus, calycibus laxis, tubo corollæ pentagono incurvo.

COTYLEDON *purpurea*; foliis lineari-oblongis carnosis glabris, floribus paniculatis. *Thunb. prodr.* 83 ?

The COTYLEDON *curviflora* appears to us to be an undescribed species, unless it should be THUNBERG's *purpurea*, which does not seem very probable, because neither the flowers nor leaves are of that colour. There is a species figured by BURMANN which has flowers not unlike those of our plant, but which are said to be erect, and the flowering stem is represented to be pubescent.

The stem is fleshy, rough with the vestiges of former leaves. From the extremities of the thick branches shoot straight, rounded, smooth, flowering stems, clothed with scattered fleshy, linear, semicylindrical leaves, and bearing a few flowered panicle at the extremity. The peduncles are twisted in a fantastical manner. *Calyx* large, lax, of five unequal fleshy leaflets. *Corolla* tubular, yellow, streaked with red: *tube* above an inch long, curved, somewhat inflated upwards,

upwards: limb not a third part the length of the tube,
5-cleft: laciniæ acute, reflexed but not rolled back. *Fila-
ments* thickened at the base, vilous. Styles longer than the
stamens.

Communicated by Messrs. WHITLEY, BRAMES, and MILNE,
in October. Native of the Cape of Good-Hope, from whence
it was brought two years ago by Mrs. STUART, on her passage
from the East-Indies.

COTYLEDON DECUSSATA. CROSS-LEAVED
COTYLEDON.

Class and Order.

DECANDRIA PENTAYNIA.

Generic Character.

Cal. 5-fidus. *Cor.* 1-petala. *Squamæ* nectariferæ 5, ad basin germinis. *Caps.* 5.

Specific Character and Synonyms.

COTYLEDON *decussata*; fruticosa, foliis concinne decussatis subteretibus mucronatis glaucis, floribus paniculatis pendulis.

COTYLEDON *papillaris*; farinoso-alba, foliis concinne decussatis oppositis numerosis oblongo-cuneatis teretibusve vel subclavatis acutis, subhorizontalibus; pagina superiore depressa. *Haworth Suppl. Pl. Succ. p.* 21.— vix *C. papillaris* Thunbergii.

COTYLEDON foliis angustis oppositis cum limbo purpureo, floribus pendulis. *Burm. Afr. n.* 54. *t.* 22. *f.* 1.

DESCR. *Stem* shrubby, erect, but very little branched. *Leaves* opposite crosswise, sessile, fleshy, nearly cylindrical, somewhat flattened on the upper side, glaucous, or even hoary, narrowed at both ends, varying somewhat in shape, and terminated with a dark purple mucro. *Common peduncle* terminal, erect, smooth, half a foot long, purple, nearly naked, or furnished with a pair of smaller leaves only, terminated in a panicle of many pendulous, red flowers. *Calyx* five-toothed, four times shorter than the tube of the corolla. *Corolla* large, shewy, red: *tube* cylindrical, nearly an inch long: *limb* half the length, divided into five *laciniæ* rolled back. *Stamens* ten, exserted: *filaments*



filaments pass through a hairy ring near the bottom of the tube: *Anthers*, before the flower opens, upright, with four grooves. *Styles* 5, rather longer than the stamens: *stigmas* lobular, villous. *Nectaries* five concave scales, one at the base of each germen.

There can be no doubt but this is the *COTYLEDON papillaris* of HAWORTH, but this author himself doubted of its being the *papillaris* of THUNBERG. At the time he wrote his Supplement, there was no possibility of coming to a certain decision in this respect, from the very insufficient specific character given in the Prodrromus; but since the publication of the Flora Capensis, it is evident that our plant cannot belong to that species, which is there described, as having a herbaceous decumbent stem, and very much smaller leaves and flowers, with the limb of the corolla equal in length to the tube. BURMAN's figure and description, quoted by HAWORTH, however imperfect, evidently apply to our plant. as this figure is not quoted to any other species, and the description of no recorded one corresponds, we are constrained to apply to it a new specific name, that of *papillaris* being, as above-stated, already pre-occupied. We have accordingly given one from the striking decussate position of the leaves.

This very rare and beautiful species of *COTYLEDON*, was kindly communicated to us in June last, by Mr. Hoop, Surgeon, South Lambeth, who possesses a fine collection of rare succulent plants, which he cultivates with great success.

TAB. 7993.
COTYLEDON ELEGANS.
Mexico.

CRASSULACEÆ.

COTYLEDON, *Linn.*; *Benth. et Hook. f. Gen. Plant.* vol. i. p. 659; *Engler & Prantl, Pflanzenfam.* vol. iii. 2, A, p. 32.

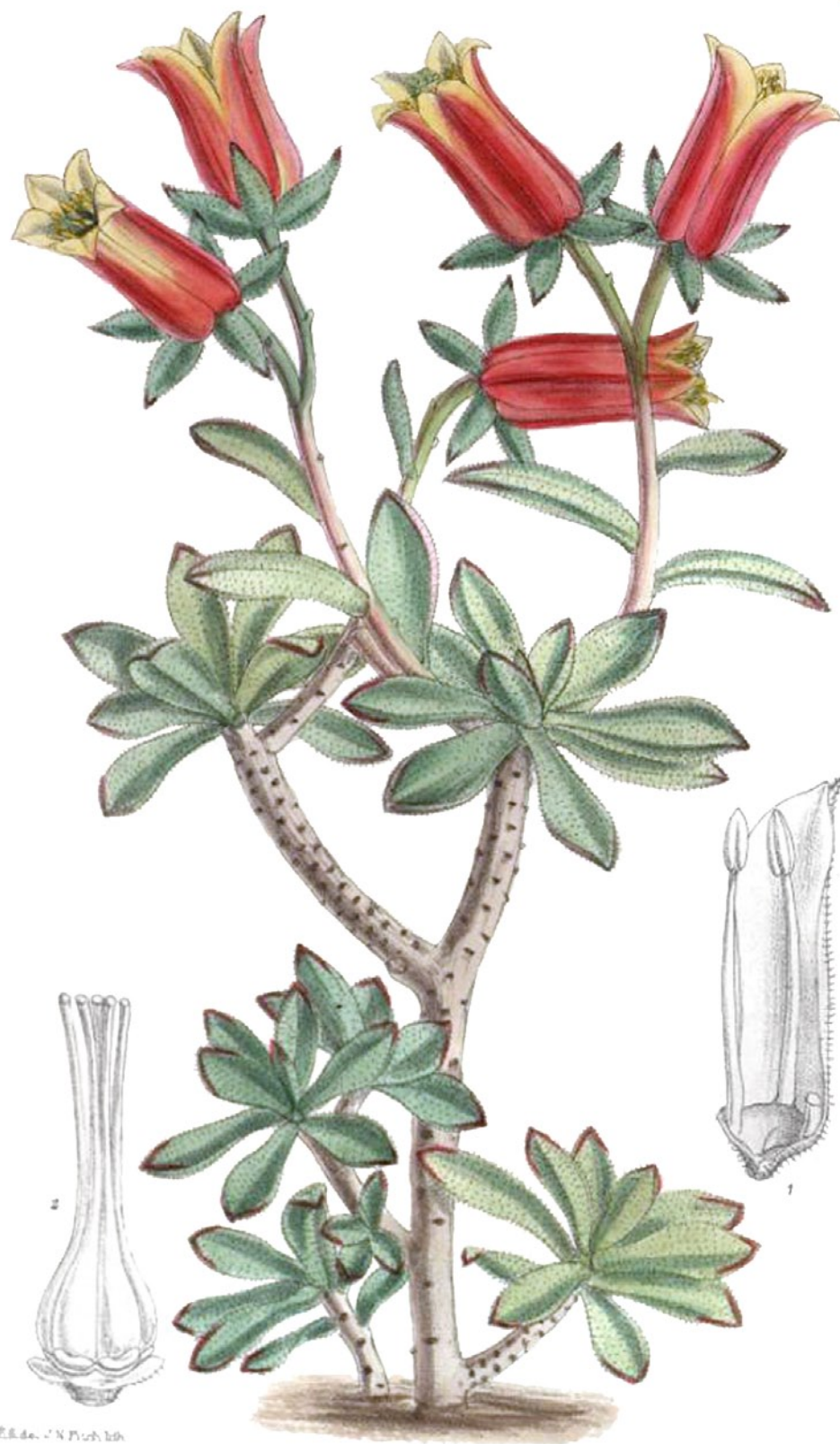
Cotyledon (§ *Echeveria*) **elegans**, *N. E. Brown*; species distinctissima, indumento et pedunculis 1- vel 2-floris facile distinguitur.

Suffrutex succulentus, ramosus, usque 20 poll. altus, omnino pubescens. *Folia* laxè rosulata, sessilia, spathulato-oblanœolata, acuta, $\frac{2}{3}$ – $1\frac{1}{4}$ poll. longa, $\frac{1}{4}$ – $\frac{1}{2}$ poll. lata, $\frac{1}{6}$ poll. crassa. *Pedunculi* infra folia oriundi, $2\frac{1}{2}$ –6 poll. longi, paucifoliati, apice 1- vel 2-flori. *Sepala* inæqualia, patentissima, lanceolata, acuta. *Corolla* circiter 1 poll. longa, erecta, tubuloso-campanulata, pentagona, extra coccinea, intra flava; segmenta fere ad basin libera, lineari-oblonga, acuta, dorso carinata, basi leviter gibbosa, apice recurva. *Stamina* inclusa, pallide lutea, glabra; filamenta filiformia, glabra. *Glandulæ hypogynæ* brevissimæ, transversæ, truncatæ. *Carpella* corollæ subæquilongâ, glabra.—*Oliverella elegans*, *Rose in Bull. New York Bot. Gard.* vol. iii. p. 2.

This most distinct and handsome species was found in August, 1901, in cultivation at Amacamaca, near the City of Mexico, by Dr. J. N. Rose, of the United States National Herbarium at Washington, and a plant was sent by him in 1903 to Kew, where it flowered in June, 1904. The specimen figured is a young plant; in the adult state it is of a much larger size. *C. elegans* is one of the very few species of *Cotyledon* that are pubescent, and this character, in conjunction with its one- or two-flowered peduncles, readily distinguish it from all others. Although the peduncles bear so few flowers, their large size and brilliant colour make it one of the most attractive species yet introduced. Like most of its Mexican congeners, this species belongs to the section *Echeveria*, and although Dr. Rose has published it under a new generic name, I can find nothing, either in habit, vegetative organs, or floral structure, whereby it can be generically separated.

Descr.—A suffruticose, succulent perennial, branching from the base upwards, one to two feet high; branches, leaves, peduncle, calyx, and outside of the corolla softly and minutely pubescent. *Branches* a quarter to a third of an inch thick. Leaves in small, lax, terminal rosettes,

JANUARY 1ST, 1905,



W. H. R. & N. P. 1905

Vincent Brooks, Day & Son [Ld.]

L. Reeve & Co. London

spreading, sessile, two-thirds to one inch and a quarter long, one-third to half an inch broad, one-sixth thick, spathulate-ob lanceolate, acute, flat above, convex beneath, light green, tips tinged with red. *Peduncles* arising below the rosettes of leaves, two to six inches long, bearing a few scattered, spreading leaves, which soon fall away, one- or two-flowered; pedicels half to one inch long. *Flowers* sub-erect. *Sepals* unequal, spreading, linear-lanceolate, four to six or seven lines long, about two lines broad, acute, light green. *Corolla* about an inch long, and half an inch in diameter, tubular-campanulate, five-angled, bright, clear red, or almost scarlet outside, light yellow within; segments free almost to the base, but closely overlapping, oblong, acute, recurved at the apex, slightly gibbous at the base, acutely keeled down the back. *Stamens* inserted a little above the base of the corolla, included, filaments rather stoutly filiform, not dilated at the base, pale yellow, glabrous; anthers pale yellow. *Hypogynous glands* very short, broader than long, truncate. *Carpels* about an inch long, shortly ovoid at the base, tapering into long styles, pale yellow below, greenish above, with brown stigmas.—N. E. BROWN.

Fig. 1, portion of corolla and two stamens; 2, pistil and two hypogynous glands:—*all enlarged*.

COTYLEDON FASCICULARIS.

Glaucous-blue Cotyledon.

Nat. Ord. CRASSULACEÆ.—DECANDRIA PENTAGYNIA.

Gen. Char. Calyx 5-partitus, corollæ tubo æqualis v. brevior. Petala 5, sæpius ad medium connata, erecta v. patentia. Stamina 10, rarissime 5, petalis sæpius breviora. Squamulæ variæ. Ovarii carpella 5, in stylos filiformes attenuata, stigmatibus parvis; ovula ∞ . Folliculi 5, ∞ -spermi.—Herbæ v. frutices, raro annuæ, ramis foliisque sæpius crassis, sed habitu valde variæ. Folia opposita v. alterna, petiolata v. sessilia.

COTYLEDON *fascicularis*; glaberrima, pallide albo-virens, glauca, foliis sparsis sessilibus cuneato-obovatis cuspidatis planiusculis crassis, paniculam ramis elongatis scorpioideis, floribus magnis pedicellatis pendulis, calycis lobis brevibus late ovatis acutis, corolla tubo calyce multo longiore subcylindraceo, lobis reflexis lineari-oblongis acutis.

So far as these plants can be determined by descriptions, this appears without doubt to be the *Cotyledon fascicularis* of Aiton, and it further agrees with an unnamed drawing made many years ago at Kew of a *Cotyledon* that existed in the Garden at the date of the publication of 'Hortus Kewensis.' It is a beautiful plant, a native of South Africa, from whence the specimen here figured was sent by Mr. Cooper, to our friend W. W. Saunders, Esq., F.R.S., of Reigate, in whose fine collection of succulent plants it flowered in May 1865. The habitats assigned in Harvey and Sonder's 'Flora Capensis' are chiefly in the Karroo districts.

DESCR. A glaucous very pale green erect shrub, one to two feet high, quite glabrous. *Leaves* scattered, two to three inches long, sessile, broadly obovate-cuneate, cuspidate, fully one-third of an inch in thickness, slightly concave, very pale glaucous-green, with a yellowish margin. *Flower-stalk* ten to twenty inches high, stout, terete, erect, paniculately branched; *branches* erecto-patent, with scorpioid inflorescence. *Bracts* on the stem few, small, half an inch long, oblong, OCTOBER 1ST, 1866.



W. Fitch, del. et lith.

Vincent Brooks, imp.

acute. *Flowers* pedicillate, pendulous, one inch long. *Calyx-lobes* broadly ovate, acute. *Corolla* puberulous, five to six times longer than the sepals, cylindrico-campanulate, with five reflexed linear-oblong lobes; *tube* yellow-green and dull red; *lobes* dull red with green margins. *Stamens* ten, included; *filaments* pubescent at the very base. *Squamulæ* connate with the base of the ovary, short, concave —J. D. H.

Fig. 1. Base of corolla and stamens. 2. Carpels and squamulæ. 3. Transverse section of carpels:—*all magnified*.

TAB. 8036.
COTYLEDON INSIGNIS.
Nyasaland.

CRASSULACEA.

COTYLEDON, Linn.; *Benth. et Hook. f. Gen. Plant.* vol. i. p. 659; *Engl. & Prantl, Pflanzenf.* vol. iii. 2 A, p. 32.

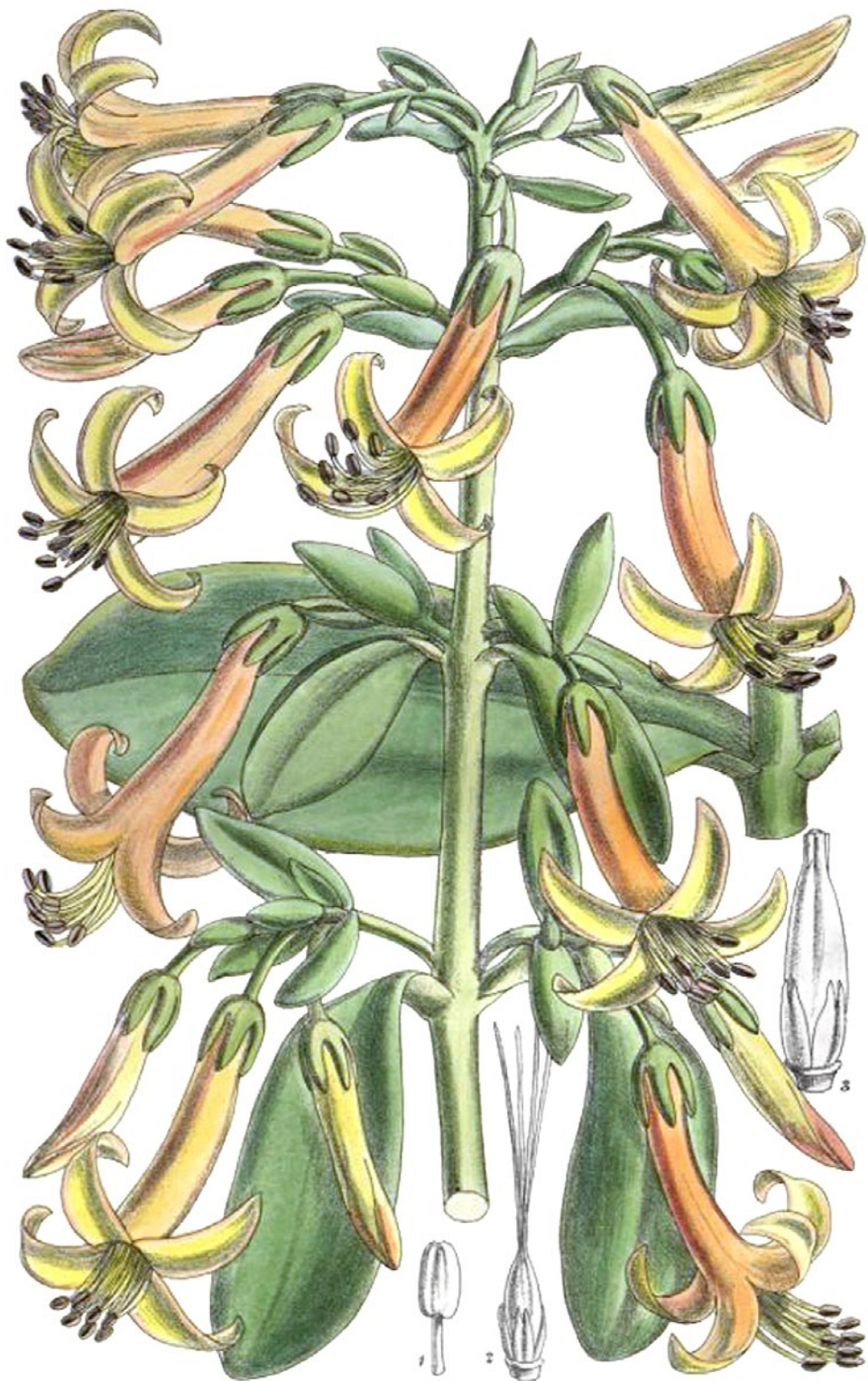
Cotyledon insignis, N.E. Br. (sp. nov.); inter species floribus majoribus, foliis oppositis et cymis axillaribus distinctissima.

Planta succulenta, 2 ped. alta, omnino glabra, floribus exceptis ex toto viridis. *Folia* opposita, breviter petiolata, recurva, 3–5 poll. longa, 1–2 poll. lata, oblonga vel oblanceolato-oblonga, obtusa, basi angustata, integra vel obscure dentata. *Cymæ* axillares et terminales, pedunculata, 1–3-floræ. *Bracteæ* $\frac{1}{2}$ –1 poll. longa, $\frac{1}{4}$ – $\frac{1}{2}$ poll. lata, lanceolata vel oblongo-lanceolatae, acute. *Pedicelli* 6–9 lin. longi. *Calyx* 4–5 lin. longus, 4-lobus; lobi erecti, 3–4 lin. longi, lanceolati, acuti. *Corollæ* tubus circiter $1\frac{1}{2}$ poll. longus, leviter curvatus, rubescens; lobi recurvi, 7–8 lin. longi, circiter $\frac{1}{4}$ poll. lati, lanceolati, acuti, luteo-virentes, rubescentes, dorso rubri. *Stamina* exserta; *antheræ* oblongæ, rubescentes. *Glandulæ* hypogynæ 3 lin. longæ, elongato-ovatae, apice bifidæ. *Carpella* 4; styli filiformes, exserti.

This fine *Cotyledon* is one of the most distinct in the genus, differing in habit from all other known species. Its flowers have some resemblance to those of *C. curviflora*, Sims (B. M. t. 2044), but in all other respects it is entirely different. It was discovered on one of the mountains of Nyasaland, British Central Africa, at an altitude of 7000 feet, by Mr. John Mahon, who sent seeds of it to Kew in 1898, where it first flowered in February of this year. It requires cool stove treatment, similar to that given to the various species of *Kalanchoe*.

Descr.—A succulent plant about two feet high, glabrous on all parts. *Stems* or branches erect, about half an inch thick, light green, not glaucous. *Leaves* opposite, much recurved, three to five inches long, one to two inches broad, one to one line and a half thick, oblong or oblanceolate-oblong, obtuse, cuneately narrowed into a short petiole at the base, entire or obscurely dentate, flat, with the midrib faintly channelled above, slightly prominent beneath, green, somewhat shining, not glaucous. *Cymes* from the axils of the upper leaves and terminal, pedunculate, one- to three-flowered. *Peduncles* two to ten lines long. *Bracts* half to one inch long, $\frac{1}{4}$ – $\frac{1}{2}$ inch

SEPTEMBER 1ST, 1905.



broad, leaf-like, lanceolate, or oblong-lanceolate, acute. *Pedicels* two-thirds to three-quarters of an inch long, green. *Calyx* four to five lines long, deeply four-lobed, glabrous, green, shining, lobes 3–4 lines long, erect, lanceolate, acute, convex on the back. *Corolla-tube* about one inch and a half long, $\frac{1}{4}$ inch in diameter, obscurely four-angled, slightly curved upwards, light reddish; limb slightly oblique, four-lobed; lobes seven to eight lines long, about 4 inch broad, lanceolate acute, much recurved, light red on the back, and more or less suffused with light red on a yellowish-green ground on the inner face. *Stamens* eight, much exserted; filaments faintly tinted with red, adnate to the corolla, in two sets of four, for one half and three-quarters of its length respectively, four of them dilated, and forming broad lanceolate plaits at the base of the corolla-tube; anthers oblong, reddish. *Hypogynous* glands 4 inch long, elongate-ovate, narrowed above, bifid at the apex, light green with yellowish tips. *Carpels* four; ovary half an inch long, green, tapering into filiform exserted styles, a little more than an inch long, yellowish-green; stigmas simple.—N. E. BROWN.

Fig. 1, anther; 2, hypogynous glands and pistil; 3, the same larger without the styles:—*all enlarged*.

TAB. 6020.

COTYLEDON MAMILLARIS.

Native of Namaqualand.

Nat. Ord. CRASSULACEÆ.

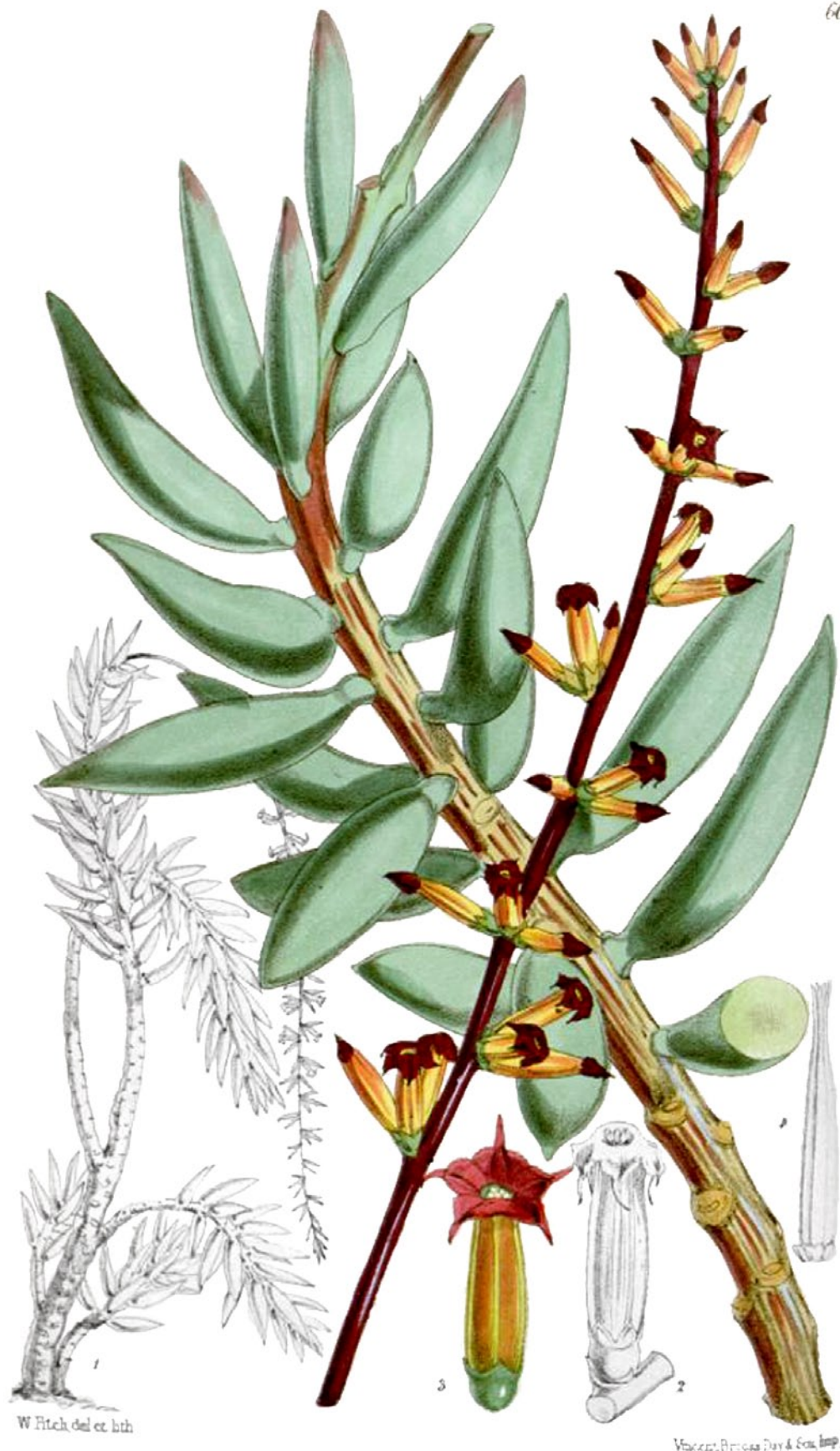
Genus COTYLEDON, Linn.; (*Benth. and Hook. f. Gen. Pl.*, vol. ii. p. 659.)

COTYLEDON *mamillaris*; glaberrima, caule crasso elongato parce ramoso ramis paucis pallide rufis apicibus decurvis laxe foliosis, foliis crassis laxis horizontalibus fusiformibus teretibus acutis glaucis basi in petiolum crassum brevem cylindraceum contractis lævibus, spica terminali elongata pendula simplici rachi cylindracea fusco-rubra, floribus $\frac{1}{2}$ -pollicaribus in fasciculos 3-floros sparsos dispositis horizontaliter divaricatis, bracteolis minutis, calyce parvo viridi hemispherico 5-dentato, corolla rubro-purpurea tubo elongato 5-gono angulis costatis, limbo parvo patenti-recurvo breviter 5-lobato, lobis saturate rubris undulatis caudato-acuminatis, squamulis minutis orbiculatis emarginatis, ovariis angustis.

COTYLEDON *mamillaris*, Linn. *f. Suppl.*, p. 242; *Thunb. Flor. Cap.*, p. 397; *DC. Prodr.*, vol. iii. p. 398; *Harv. and Sond. Flor. Cap.*, vol iii. p. 377. *C. filicaulis*, Eckl. and Zeyh. *jid. Hare.*, Lc.

A native of the arid western districts of the Cape region, which contains so many of the most peculiar forms of South African vegetation, and whence the dry stoves of our grandfathers were supplied with the majority of those curious, interesting, and often singularly beautiful succulents that are now all but banished from cultivation. Of the genus *Cotyledon* there are three-and-twenty South African species alone described in Harvey's and Sonder's Flora, of which twelve were in 1811 cultivated at Kew, where there are now eighteen.

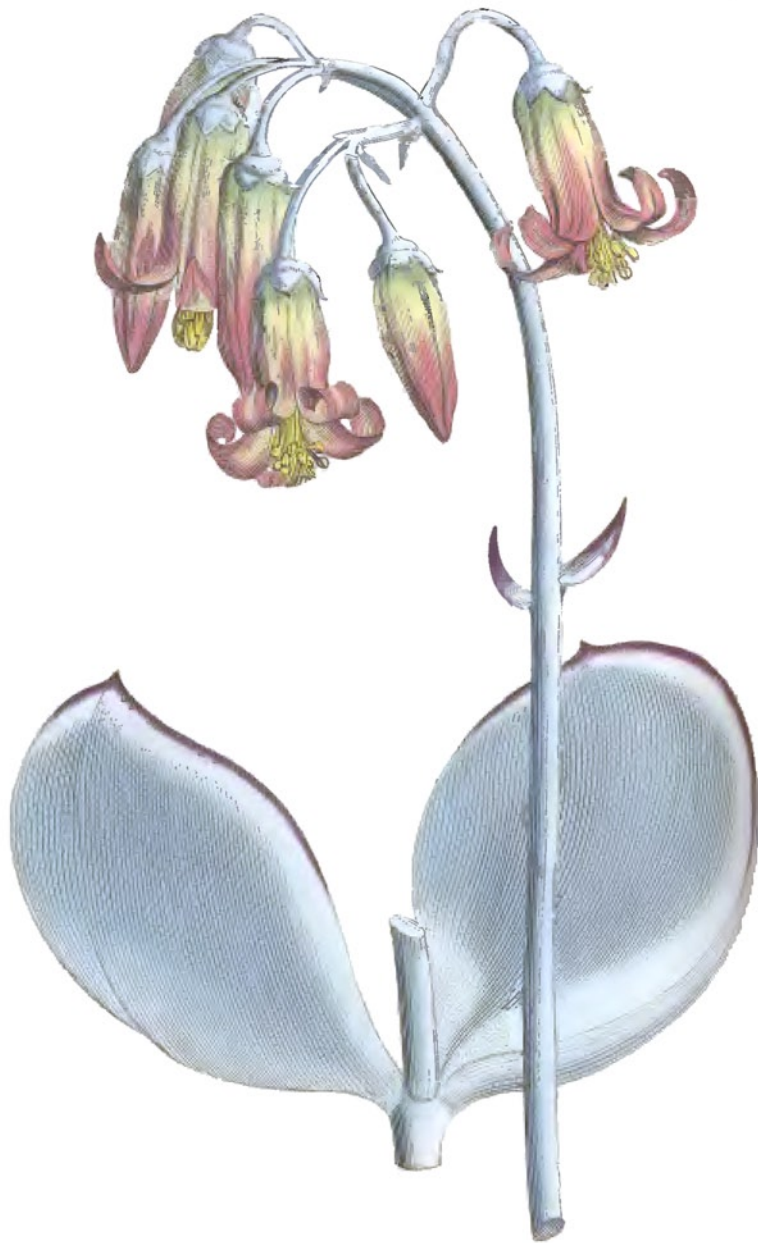
DESCR. Quite glabrous. *Stem* one to two feet high (branched, creeping and rooting, according to Thunberg), ascending in our specimen, and sparingly branched, pale red-brown, as thick as the middle finger, fleshy, covered with the



prominent scars of fallen leaves, tips decurved. *Leaves* scattered, two to two and a half inches long, horizontal or ascending, spindle-shaped, pointed, contracted at the base into a short, stout, swollen petiole, quite cylindric on a transverse section, succulent, terete, quite smooth, pale, very glaucous green, nerveless. *Spike* a foot long, terminal, slender, pendulous; peduncle and rachis dark chestnut-brown, cylindric. *Flowers* two-thirds of an inch long, in scattered fascicles of three, spreading horizontally from the rachis and divaricating from one another, quite sessile. *Calyx* green, hemispheric, with two minute bracts at the base, shortly 5-toothed. *Corolla-tube* dull red-brown, half an inch long, tubular, with 5-ribbed angles, contracted at the mouth; limb dull red-brown, a quarter of an inch in diameter, spreading and reflexed, 5-lobed; lobes shallow, undulate, with a long subulate point. *Scales* minute, orbicular, notched. *Ovaries* long, slender.—*J. D. H.*

Fig. 1, Whole plant:—*diminished*; 2, flower and bracts on portion of rachis; 3, flower removed; 4, ovaries and scales:—*all magnified*.

N^o 321



Pub. by W. Curtis Sc^{to} Geo. Crescent Dec. 1. 1795. Edwards del. & sculp.

[321]

COTYLEDON ORBICULATA. ROUND-LEAVED NAVEL-WORT.

Class and Order.

DECANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Cor.* 1-petala. *Squamæ* nectariferæ ad basin grminis. *Capf.* 5.

Specific Character and synonyms.

COTYLEDON *orbiculata* foliis orbiculatis carnofis planis integerrimis, caule fruticoso. *Linn. Syst. Veg. ed.* 14. *Murr. p.* 428. *Ait. Kew. var. ♂ v.* 2. *p.* 106.

COTYLEDON *africanum* frutescens incanum orbiculatis foliis. *Herm. Lugd.* 349. *t.* 551. *Morif. Hist.* 3. *p.* 474. *f.* 12. *t.* 7. *f.* 39.

The *cotyledon orbiculata* is one of our oldest succulents, being introduced as long since as 1690, by Mr. BENTICK*: it still retains a place in most collections, deservedly indeed, for it has every claim to our notice; its appearance is magnificent, the glaucous colour of its foliage highly pleasing, its flowers large and of long duration; it blows freely, grows rapidly, is easily increased by cuttings, and will succeed in a house or window, with the common treatment of an African Geranium.

When suffered to grow, it will become a shrub of considerable size; but this is not necessary for its flowering, as young and small plants are disposed to throw out blossoms, which is not the case with a plant extremely similar to, and often confounded with it, viz. the *Crassula Cotyledon*, whose foliage indeed scarcely differs from our plant but in being finely dotted.

It is a native of the Cape, and flowers from June or July to September.

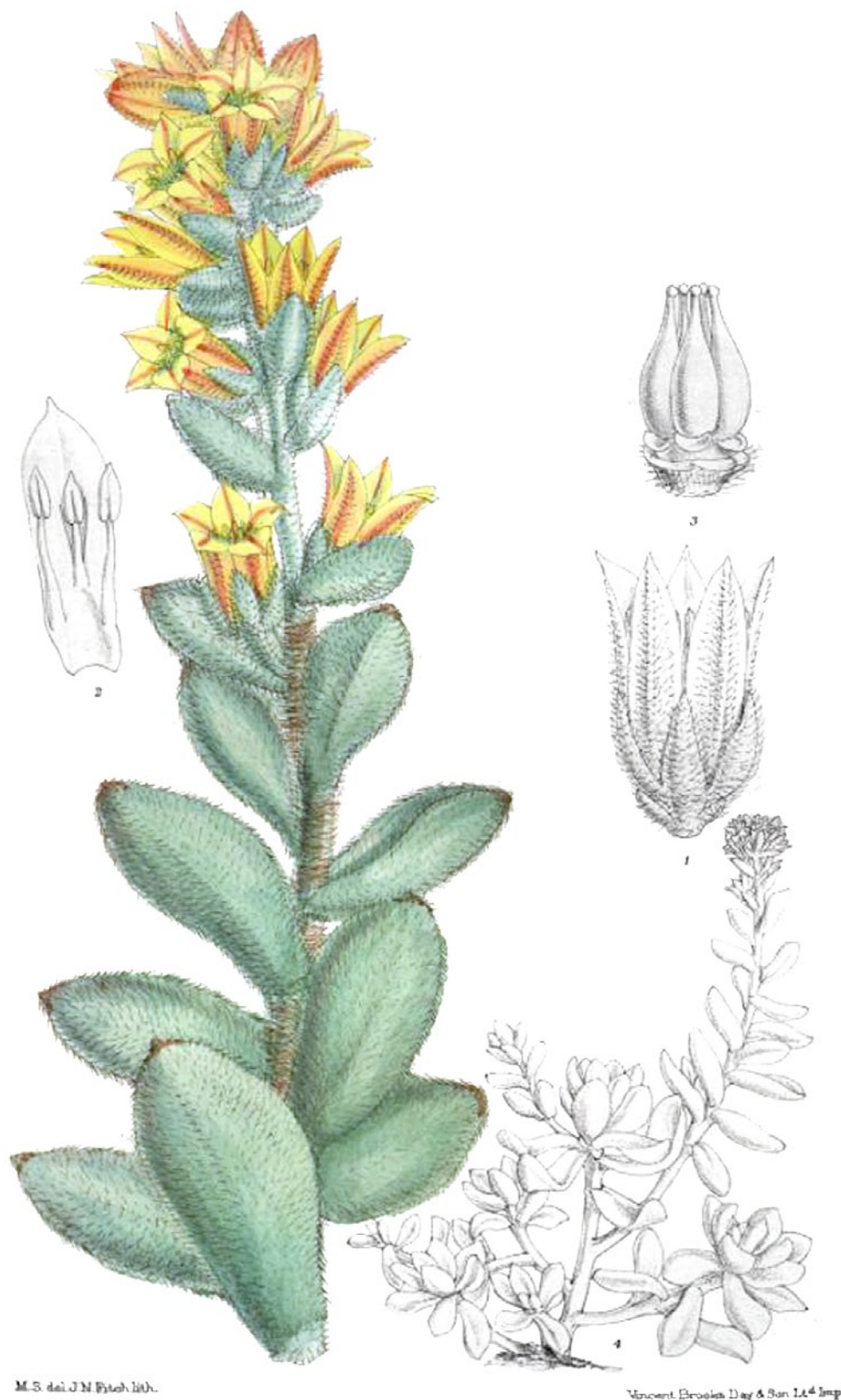
In the *Hort. Kew.* of Mr. AITON, four varieties are enumerated differing chiefly in the form of their foliage.

* AIT. KEW.

TAB. 7918.

COTYLEDON (*Echeveria*) PULVINATA.*Native of Mexico.*

Nat. Ord. CRASSULACB..

Genus COTYLEDON, Linn.; (*Benth. et Hook. f. Gen. Plant. vol. i. p. 659.*)

M.S. del. J.N. Pyle lith.

Vincent Brooks Day & Son Ltd Imp

COTYLEDON (*Echeveria*) *pulvinata*; fruticulus pedalis, robustus, carnosus, pluricaulis v. a basi ramosus, caulibus ramisque divaricatis $\frac{1}{3}$ – $\frac{1}{2}$ poll. crassis primum dense argenteo-velutinis demum ferrugineis, internodiis brevibus, foliis patulis 2–3 poll longis sessilibus spathulato-obovatis oblongisve obtusis crasse carnosis utrinque convexis densissime argenteo-velutinis pilis demum retrorsis pallide viridibus, floribus $\frac{3}{4}$ pollicaribus in ramulos simplices elongatos foliosos ascendentes dispositis spicatum racemosis velutinis, bracteis foliaceis inferioribus pollicaribus, pedicellis brevibus crassis, calycis segmentis ovato-lanceolatis acutis erectis viridibus, corolla calyce duplo longiore urceolato-campanulato rubro-aurantiaco, tubo brevi, segmentis oblongo-lanceolatis acuminatis apicibus recurvis dorso obtuse carinatis marginibus pallidis, staminibus corolla triente brevioribus, antheris lineari-oblongis apiculatis, disci glandulis depressis lunatis, ovarii carpellis oblongo-ovoides teretibus in stylos breves inclusos attenuatis, stigmatibus capitellatis.

C. pulvinata, Hook. f.*Echeveria pulvinata*, Roe, ined.

Cotyledon pulvinata differs from the majority of its congeners in its branching habit, scattered leaves, spiciform raceme and clothing of velvety, silvery, white hairs, which turn brown on the branches, and are reflexed in age on the leaves. It has slight claims to be placed in the genus *Echeveria* of De Candolle, which is reduced to *Cotyledon* in the "Genera plantarum," but this rests only on the costate corolla-lobes, for it has not the foliaceous sepals upon which mainly the genus was established. But I understand that Dr. J. N. Rose and Dr. N. L. Britton are engaged on a revision of the whole of the North American *Crassulaceæ*, and that they propose considerable generic alterations by the creation of several new ones. Therefore I will not further discuss the question of generic limits here.

The plant figured was received at Kew in 1900 from the United States National Museum, Washington, and it flowered in the Succulent House in March of the present year.

OCTOBER 1ST, 1903.

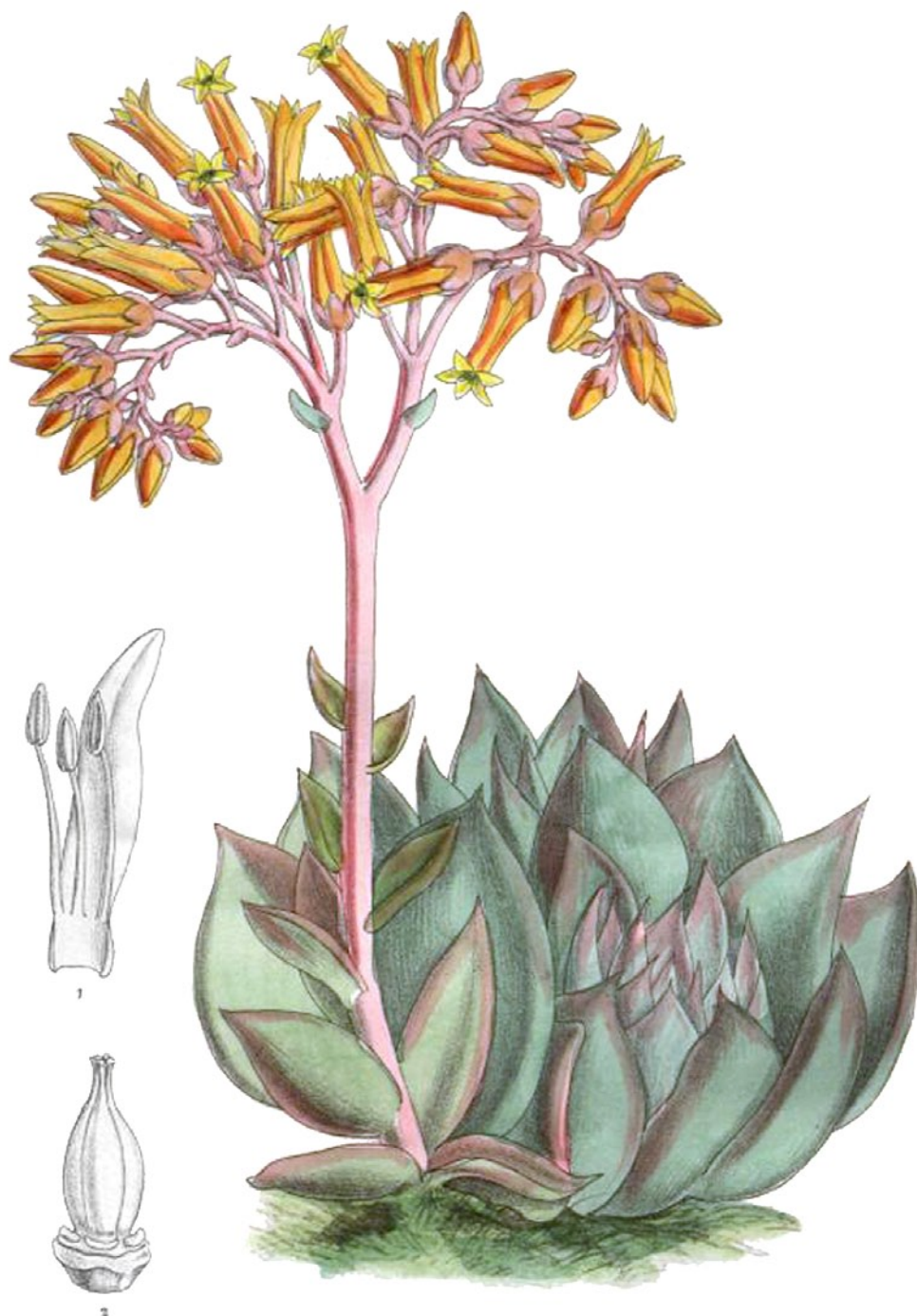
Descr.—A small, very stout, fleshy shrub, seven to eight inches high (in the specimen figured), branching below and upwards, sometimes from the root; covered densely with a silvery, velvety tomentum, which becomes rusty on the stems, and retrorse on the foliage. *Leaves* two to three inches long, sessile, sub-rosulate towards the tips of the spreading branches, spathulately obovate or oblong, obtuse, thickly fleshy, convex on both surfaces, nerveless, pale green. *Flowers* three-fourths of an inch long, erect or inclined, disposed in a spiciform raceme terminating an elongate, ascending, stout, leafy branch, orange-red. *Bracts* leaf-like, the lower an inch long, the upper gradually smaller. *Pedicels* very short and stout. *Calyx* about half as long as the corolla, green; segments ovate-lanceolate, acute, erect. *Corolla* urceolately campanulate, tube short; segments oblong-lanceolate, acuminate, dorsally velvety and obtusely keeled, margins nearly glabrous, pale, tips spreading or recurved. *Stamens* about one-third shorter than the corolla-segments; anthers linear-oblong, apiculate. *Disk-glands* lunate. *Carpels* narrowly ovoid, terete, narrowed into short, subulate styles; stigmas capitellate.—*J. D. H.*

Fig. 1, flower; 2, segment of corolla and stamens; 3, glands of disk and pistil:—*all enlarged*; 4, reduced view of whole plant.

COTYLEDON (ECHEVERIA) PURBUSII.

Native of California.

Nat. Ord. CRASSULACEÆ.

Genus COTYLEDON, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. i. p. 659.)

COTYLEDON (*Echeveria*) *Purpusii*; acaulis, glaberrima, foliis dense rosulatis crasse carnosis ellipticis ovatisve acuminatis apicibus pungentibus leviter incurvis supra concavis dorso rotundatis glauco-viridibus præcipue apices versus rubro tinctis, exterioribus in fasciculo $1\frac{1}{2}$ –2-pollicaribus, interioribus dense congestis minoribus glaucis, pedunculo valido pallide rubro infra medium foliis paucis alternis radicalibus consimilibus sed multo minoribus ovatis acuminatis instructo, cyma 4–5 poll. lata dichotoma, ramis primariis divarictis recurvis, ramulis pedicellisque roseis, floribus $\frac{3}{4}$ poll. longis suberectis, pedicellis $\frac{1}{6}$ – $\frac{1}{3}$ poll. longis basi bracteola parva carnosula instructis, calycis basi rotundati lobis ovatis obtusis, corolla coccineæ laciniis lineari-lanceolatis apicibus acutis recurvis intus aureis in tubum basi integrum anguste conicum dispositis, staminibus 10, filamentis basi laciniarum insertis glaberrimis, antheris inclusi, ovario ovoideo, carpellis in stylum brevem 5-sulcatum attenuatis.

Echeveria Purpusii, Shumann in *Gartenfl.* 1896, p. 609, fig. 97 (*ic. xylog.*); *Gard. Chron.* 1896, vol. ii. p. 698, fig. 123.

Cotyledon Purpusii is a native of the Sierra Nevada of California, where it was discovered at an altitude of seven thousand to eight thousand feet on Mt. Whitney, by the gentleman to whom it is dedicated by the author in the "Gartenflora." Nine Californian species of the genus are given by S. Watson in the "Flora of California," with the descriptions of one of which, *C. nevadensis*, Wats., *C. Purpusii* so closely agrees, that it is possible that the latter is a synonym, especially as Sonora and the Yosemite Valley (the habitats for *nevadensis*) are, though much lower in elevation, in the same botanical region and group of mountains as Mt. Whitney. Referring to the Herbarium, I find it impossible from dried specimens to settle this point, which must be reserved for study when living specimens of *C. nevadensis* are available for comparison. Another very similar species is *Echeveria Desmetiana*, L. de Smet (*ex Morren in Belg. Hortic.*, 1874, p. 159; *Ill. Hort. sér. 6, ii. p. 93, f. 13*), which is recorded as a native of Mexico.

MAY 1ST, 1900.

The specimen here figured of *C. Purpusii* was sent to me by Mr. R. J. Lynch, for figuring in this work from the Botanic Gardens of the University of Cambridge, where it flowered in the open air in June, 1899, having been subjected, without injury, to at least 12 below the freezing point in the previous winter.

Descr.—Quite glabrous. *Leaves* crowded in a sessile rosette, four inches in diameter, thickly fleshy, of a dull, rather pale, more or less glaucous-green colour, tinged with dull red towards the margins and tips, outer one and a half to two inches long, ovate or elliptic-ovate, acuminate, tip pungent, inner densely crowded, narrower, paler, more glaucous. *Peduncle* four inches high, ascending from the base of the rosette, stout, and, as well as the cyme-branches and pedicels, pale, rose-coloured, bearing below the middle scattered, ovate, acuminate leaves like the radical, of which the lower are an inch long, the upper gradually smaller. *Cyme* twice dichotomous, branches divaricate, primary two and a half inches long, spreading and recurved; bracts small, obtuse, fleshy. *Flowers* erect, pedicelled, three-fourths of an inch long. *Sepals* short, broadly ovate, obtuse. *Corolla* conical-tubular; tube very short; segments linear, scarlet, with spreading, acute, golden-yellow tips. *Stamens* included; filaments subequal; anthers linear-oblong. *Ovary* ovoid-oblong, narrowed into a short style with five minute stigmas.—*J. D. H.*

Fig. 1, portion of corolla and stamens; 2, tip of pedicel and ovary:—*Both enlarged.*

COTYLEDON RAMOSISSIMA.

Native of South Africa.

Nat. Ord. CRASSULACEÆ.

Genus COTYLEDON, Linn.; (*Benth. & Hook. f. Gen. Pl. vol. i. p. 659.*)

COTYLEDON (Paniculatæ) *ramosissima*; fruticosa, glaberrima, glaucescens, foliosa, ramosissima, caule crasso erecto, ramis ramisque confertis patentibus cylindræis annulatis cicatricatis, foliis confertis breviter petiolatis obovato-orbiculatis subacutis v. breviter cuspidatis concavis integerrimis dure carnosius purpureo-marginatis glauco-viridibus, floribus ad apices ramulorum solitariis pedicellatis cernuis sesquipollicaribus, calycis brevis dentibus acutis sinibus latis rotundatis, corolla campanulata cylindræa viriscente lobis brevibus recurvis pallide sanguineis, filamentis corollæ tubo basi adnatis antheris exsertis, carpellis gracilibus, ovariis antice planis, basi squamis cucullatis adnatis.

C. ramosissima, *Haw. suppl.* p. 25; *DC. Prodr.*, vol. iii. p. 396; *Hare. & Sond. Fl. Cap.*, vol. ii. p. 372.

A native of the interior districts of South Africa, as at Uitenhage, George, the Zwartkops river, where it forms a bush from one to three feet high, remarkable for its density, bushy and leafy habit, and the pale glaucous green of the foliage and young parts. It is very closely allied to the beautiful *C. orbiculata* of this Magazine (Tab. 321), differing in habit and wanting that snowy glaucous hue of that plant, but remarkably similar in form and size of the flower. Though referable to the section with paniced flowers in all other respects but this, the flowers are in all our specimens, living and dried, solitary at the tips of the branchlets.

Cotyledon ramosissima has been long cultivated at Kew, and all trace of its introduction is lost, though this must have been since the date of the publication of the second edition of the "Hortus Kewensis," namely 1811, in which work it is not described; it was, however, discovered soon after that date (in 1813) by Burchell, whose specimens are at the Kew Herbaries. The Kew plant for which the accompanying figure was made was sent by Mr. McGibbon, of the Capetown Botanical Gardens, and flowered in the month of September.

DESCR. A bushy, succulent, much branched, erect shrub, MARCH 1ST, 1879.

one to three feet high; branches cylindric, annulate, covered with an ashy bark. *Leaves* crowded, opposite, three-quarters to one inch long, orbicular, obovate, subacute or cuspidate, concave, densely fleshy, quite entire, nerveless minute glaucous furpuraceous scales, derived from the dead upper cells of the epidermis, margins dull purple. *Flowers* solitary at the tips of the branchlets, drooping, an inch and a half long; peduncle curved, naked, shorter than the flower, swollen in a top-shaped manner beneath the calyx. *Calyx-tube* short, cupular; teeth five, very short, triangular, acuminate, appressed to the corolla, separated by a broad shallow rounded sinus. *Corolla* much larger than the calyx, fleshy, campanulate; tube pale glaucous-green, cylindric or obscurely angular, lobes one-third the length of the tube, spreading, ovate, acute, thick, glabrous. *Stamens* ten, filaments long, much thickened and pubescent at the base, where they are united into a ring which is attached to the corolla near its base; this ring projects in the cavity of the corolla and forms at its base a chamber which probably catches the nectar secreted by the glands at the base of the carpels, which would otherwise escape from the pendulous flower; anthers exerted. *Carpels* slender, tapering into filiform styles; ovary flat on the back, adnate below the horizontal fleshy cucullate hypogynous glandular scales.—*J. D. H.*

Fig. 1, Vertical section of flower; 2, portion of corolla laid open, and stamens showing the chamber formed by the shortened bases of the filaments; 3, bases of carpels and scales; 4, transverse section of carpel:—*all enlarged*.

COTYLEDON SALZMANNI.

Salzmann's Cotyledon.

Nat. Ord. CRASSULACEÆ—DECANDRIA PENTAGYNIA.

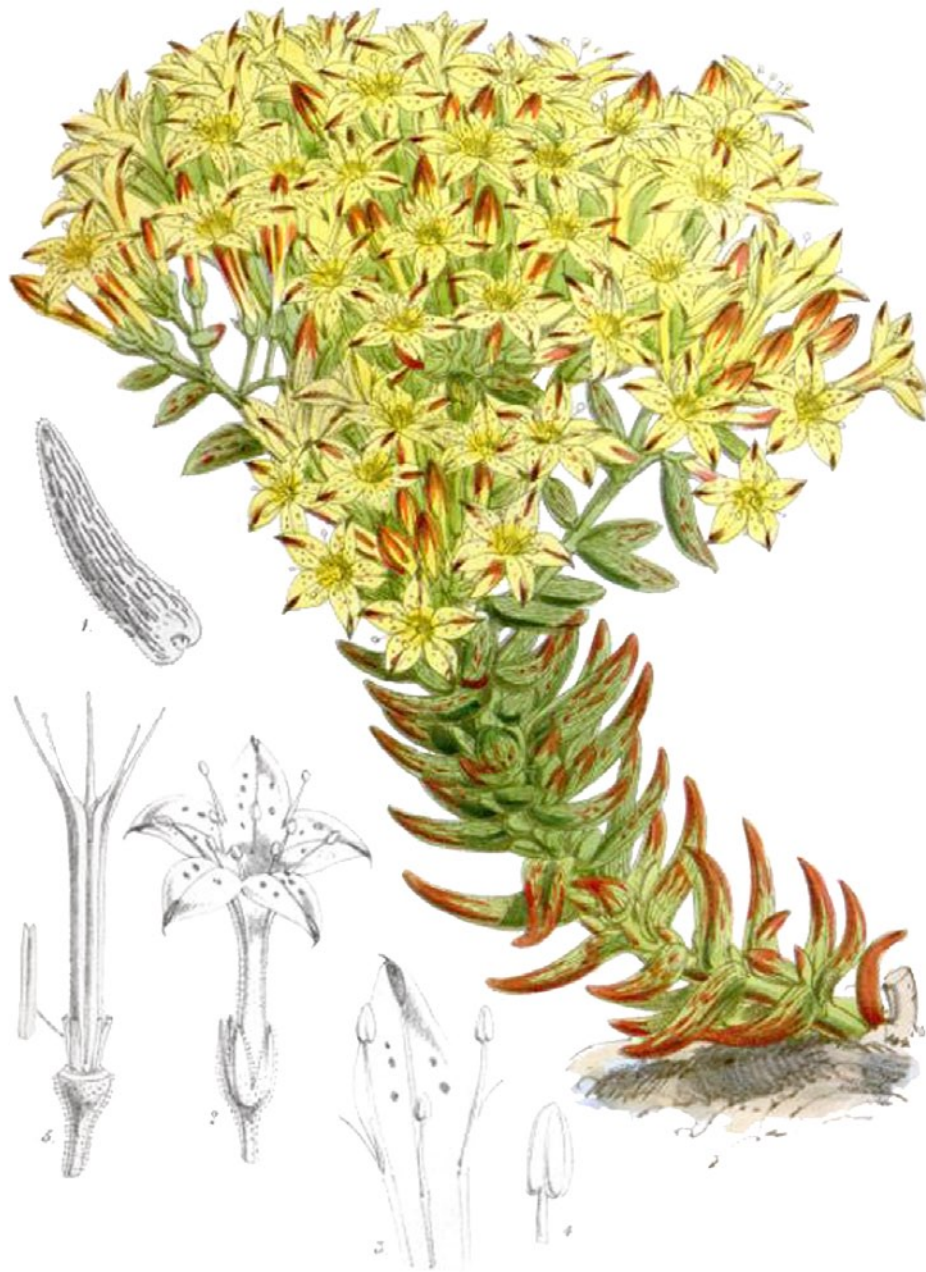
Gen. Char.—*Calyx* 5-partitus, corollæ tubo equalis v. brevior. *Corollæ* tubus angustus v. amplus, urceolatus v. cylindricus, teres v. 5-gonus, limbi lobis parvis patentibus. *Stamina* 10 (rarissime 5), tubo corollæ inserta, filamentis filiformibus brevibus v. elongatis; antheræ oblongæ, exsertæ v. inclusæ. *Squamulæ* lineares, oblongæ v. quadratæ, nunc latiores quam longæ. *Ovarii* carpella 5, libera, in stylos filiformes v. subulatos sæpe exsertos attenuata, stigmatibus oblique capitellatis; ovula in carpellis ∞ . Folliculi ∞ -spermi.—*Herbæ* v. suffrutices ramos v. subscapiger, habitu valde variæ. Folia opposita v. alterna, sesilia v. petiolata, sæpe crassissime carnosa, in paucis peltata, sparsa v. rosulata. Flores erecti v. penduli, parvi majusculi v. ampli, spicati racemosi v. cymosi, nunc speciosi. Corolla lobi æstivatione torti. Benth. and H. f. Gen. Plant. i. 659.

COTYLEDON *Salzmanni*; radice annua, ramis cymosis glanduloso-hirtis, foliis subulato-lanceolatis acutiusculis glandulosis teretibus, sepalis 5 parvi acutis hirtellis, corolla calyce plus sextuplo longiore ad tertiam partem usque profunde 5-fida, tubo subconico extus hirtello, limbi subpatuli lobis ovatis apiculatis mucronulatis flavis apice brunneis et brunneo sparse punctatis, stylis et staminibus subæqualibus exsertis.

COTYLEDON (Pistorinia) *Salzmanni*, Boiss. Voy. in Esp. p. 224, t. 63, fig. B. Walp. Rep. ii. 258.

A more beautiful rock plant of the kind than this can scarcely be imagined. It is literally a mass of brilliant golden blossoms, relieved by the red-brown spots at the tips of the corolla lobes, which give them the appearance of being forked at the apex. The foliage, too, is of a brilliant green translucent texture relieved with blood-red streaks. I have referred it with some doubt to Boissier's Mogador plant, the dried specimens of which are but one and a half inches high, and am far from satisfied that it is not a form of *C. hispanicum*, Desff.

OCTOBER 1ST, 1869.



The Royal Gardens are indebted for this beautiful plant to G. Maw, Esq., who collected it at Tangiers in the early spring of the present year, and transmitted it to Kew with many other most interesting herbaceous plants: it flowered in the month of July.

DESCR. Annual, covered with glandular hairs, tufted. *Stem* stout, inclined, ascending, as thick as a crow-quill, leafy, excessively corymbosely branched at the top. *Leaves* half an inch to two-thirds of an inch long, spreading, curved, very thick and fleshy, terete, obtuse, green, covered with short red streaks, tips red-brown. *Flowers* most abundantly produced, shortly pedicelled. *Calyx-lobes* lanceolate, one-third of an inch long. *Corolla* between funnel- and salver-shaped, golden yellow, tube half an inch long, streaked with red, lobes spreading, ovate, apiculate, golden yellow, with red-brown tips and scattered spots. *Stamens* on the throat of the corolla, exserted. *Hypogynous glands* slender, linear, bifid. *Carpels* very lender, with diverging filiform styles.—J. D. H.

Fig. 1, leaf; 2, flower; 3, corolla, tube, and stamens; 4, anther; 5, ovary and scales:—*all magnified*.

TAB. 8445.

COTYLEDON SUBRIGIDA.

Mexico.

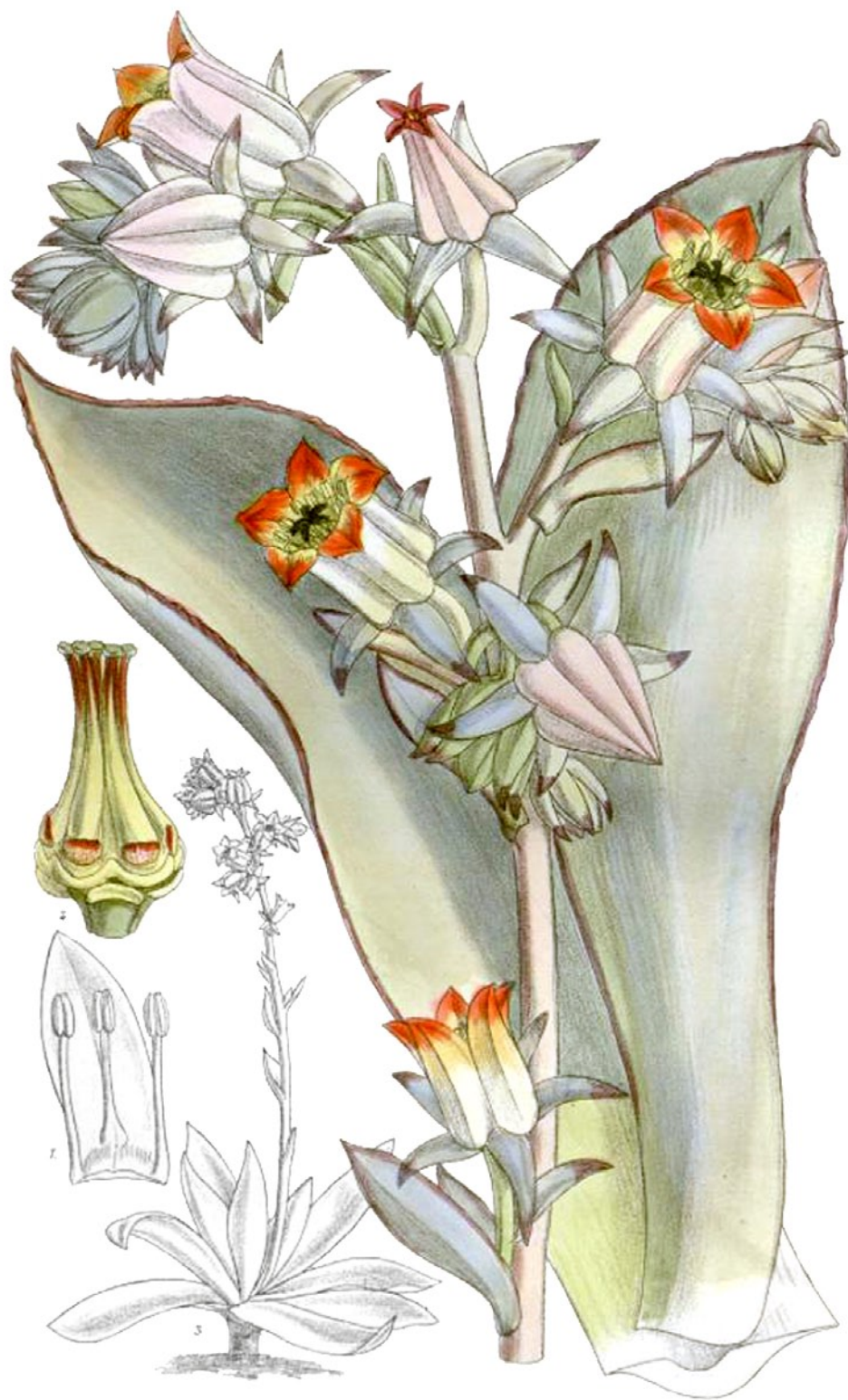
CRASSULACEAE.

COTYLEDON, Linn.; Benth. et Hook. f. Gen. Plant. vol. i. p. 659.

Cotyledon subrigida, Robins. and Seaton in Proc. Amer. Acad. vol. xxviii. p. 105; affinis *C. gibbiflorae*, Moc. and Sessé, sed foliis oblanceolatis acutis, ramis paniculae brevioribus et magis erectis floribusque aurantiacis perglaucis differt.

Herba succulenta, breviter caulescens, omnino glabra. *Caulis* 2 cm. crassus. *Folia* circiter 18, rosulata, adscendentia vel patula, sessilia, crasso-carnosa, 10–15 cm. longa, 5–6.5 cm. lata, oblanceolata vel sublanceolata, acuta, viridia, glauca, marginibus rubris leviter crispatis. *Pedunculi* axillares, circiter 50 cm. alti, superne in racemis 3–5 secundis adscendentibus ramosi, pallide virides vel rubescentes, glauci. *Bractae* inferiores 2–3.5 cm. longae, 9–17 mm. latae, superiores gradatim minores, sessiles, ovato-lanceolatae, acutae, basi breviter calcaratae, glauco-virides, rubro-marginatae. *Pedicelli* 4–18 mm. longi, glauco-virides. *Sepala* valde patula, 1.3–1.7 cm. longa, basi 5–6 mm. lata, superne attenuata, acuta, glauca, rubro-marginata. *Corolla* 2 cm. longa, 1–5 cm. diametro, 5-angularis, urceolata, fere ad basin 5-loba, pulchre aurantiaca, inferne lutescens, perglauca; lobi arcte imbricati, apice patuli, oblongi, acuti. *Stamina* 10, inclusa; antherae atrorubrae; pollen luteum. *Glandulae hypogynae* 1 mm. longae, 3 mm. latae, transversim oblongae, integrae, rubrae. *Carpella* 1–6 cm. longa, in stylum gradatim attenuata, inferne pallide viridia, superne fusco-purpurea.—*Echeveria subrigida*, Rose in Bull. New York Bot. Gard. vol. iii. p. 10.—N. E. BROWN.

The handsome *Cotyledon* which forms the subject of our illustration is very distinct from any of the other species of this genus now in cultivation, though among these it is, perhaps, more nearly allied to the familiar *C. gibbiflora*, Moc. and Sessé, than to any other. But from *C. gibbiflora* it differs widely in the form and colour of its leaves, and in the rich orange tint of its corolla, which is very glaucous on the outside. The branches of the inflorescence are shorter, more erect and stiffer. *C. subrigida* was first discovered in Mexico, in October, 1892, by Mr. C. G. Pringle, growing on ledges of cliffs in the Tultenango Cañon. The plant from which the material for our figure has been obtained was presented to Kew in 1905 by the authorities of the Natural History Museum, Washington, U.S.A., under the JULY, 1912.



name proposed by Dr. Rose. It has grown vigorously in the cooler end of the Succulent House at Kew and flowered profusely in October, 1911. Like the other species of the genus in cultivation it is easily grown if placed in a sunny position out of doors during the summer and protected from frost in winter by being transferred to a greenhouse or a heated frame.

DESCRIPTION.—*Herb*, succulent and shortly stemmed, everywhere glabrous. *Leaves* about 18, rosulate, ascending or the lower spreading, sessile, thickly fleshy, 4–6 in. long, 2–2½ in. wide, oblanceolate or almost lanceolate, acute, green and glaucous, with red somewhat crispate margin. *Peduncles* axillary, about 1½ ft. high, branching upwards into 3–5 ascending, secund racemes, pale green or tinged with red, and glaucous. *Bracts* sessile, ovate-lanceolate, acute, shortly spurred at the base, glaucous-green with red margin, gradually diminishing upwards, the lowest ¾–1¼ in. long, ⅓–⅔ in. across. *Pedicels* ⅙–⅔ in. long, glaucous-green. *Sepals* markedly spreading, ½–⅔ in. long, about ¼ in. wide at the base, narrowed upwards, acute, glaucous with red margin. *Corolla* ⅔ in. long, ⅔ in. wide, urceolate, 5-angled, 5-lobed almost to the base, brilliant orange above, yellowish lower down, very glaucous; lobes closely imbricate, spreading at the tip, oblong, acute. *Stamens* 10, included; anthers dark-red; pollen yellow. *Hypogynous glands* transversely oblong, entire, red, ⅛ in. wide, very short. *Carpels* over ½ in. long, gradually narrowed into the style, pale green below, dull purple upwards.

Fig. 1, petal with three stamens; 2, carpels and hypogynous scaks; 3, sketch of an entire plant:—1 and 2 enlarged, 3 much reduced.

TAB. 6235.

COTYLEDON TERETIFOLIA.

Native of South Africa.

Nat. Ord. CRASSULACEÆ.

Genus COTYLEDON, Linn.; (*Benth. et Hook. f., Gen. Plant.*, vol. i., p. 659).

COTYLEDON (Paniculatae) *teretifolia*; glanduloso-pubescens v. tomentosa, caule robusto ascendente, foliis sessilibus hexastiche oppositis 2–5-pollicaribus subcylindræis crasse carnosis apicibus subspathulato-rotundatis et discoloribus, pedunculo crasso erecto nudo v. foliis paucis oppositis alternisve instructo, cyma effusa ramis patentibus, calycis lobis triangulari-ovatis, corollæ aureæ tubo brevi, lobis elongatis lineari-oblongis acutis patenti-recurvis, filamentis conniventibus exsertis, glandulis hypogynis parvis, carpellis in stylis elongatis apice patentes attenuatis, stigmatibus capitellatis.

CRASSULA *teretifolia*, Thunb. *Prod. Fl. Cap.*, p. 83; DC. *Prod.*, vol. iii., p. 397; Harv. et Sond. *Fl. Cap.*, vol. ii., p. 373.

The Cape Crassulaceæ, once the favourites of the greenhouse, have, with the exception of some gaudy *Crassulas*, long gone out of fashion amongst cultivators, or are relegated to the specialist or botanist. Nevertheless, they comprise a series of as beautiful and easily cultivated plants as any group of the vegetable kingdom, and that their day will dawn again is certain. Already, indeed, the rich collection in the Succulent House at Kew has many admirers, and, thanks especially to this and to the example and liberality of Mr. Wilson Saunders, the number of cultivators of this class of plants who regularly correspond with Kew is very considerable.

The genus *Cotyledon*, which is represented in England only by the curious Navel-wort, so common on the walls and rocks of the south and west coasts of the British Isles, and in Europe, North Africa, and West Asia by a few other species, attains its maximum of development in South Africa, where upwards of twenty species are known, and from whence not a small number have been so imperfectly described that they cannot be identified; for, indeed, it is a genus that can only be studied upon living specimens. In South Africa it is chiefly confined to the south-western corner of the continent, most of the species occurring in the Cape Town district. To this

JUNE 1ST, 1876.



C. teretifolia is rather an exception, it being found as far to the east as the province of Graaf Reinet and Somerset, where it forms an undershrub on the hills. Living specimens have been received at Kew from Mr. Wilson Saunders in 1873, and from the late Mr. D. Hanbury, which flower in the month of July.

DESCR. A branching undershrub, clothed with a more or less dense pubescence of short, soft hairs, which are glandular on the inflorescence especially. *Branches* as thick as the finger, and a foot or more long. *Leaves* opposite, in six series round the branches, three to eight inches long, cylindrical or nearly so, contracted towards the sessile base, rather expanded towards the tip into a triangularly rounded discoloured apex, the old ones obscurely flattened and channelled down the middle, pale green except the red-brown apex. *Peduncle* six to eighteen inches high, stout, terete, naked, or with one or two opposite or alternate small leaves. *Cyme* four to ten inches in diameter, nearly flat-topped; bracts scattered, linear, deciduous; pedicels spreading, half to one and a half inch long. *Calyx-tube* obscure, lobes of variable length and breadth, triangular-ovate, acute, glandular. *Corolla* bright yellow, tube rather longer than the calyx-lobes, five-angled; limb of five spreading and reflexed narrow acute segments, which are glandular on the back. *Stamens* erect, exserted, with the filaments slender and conniving by their middle; anthers very small. *Hypogynous glands* minute, emarginate. *Carpels* elongate, narrowed into slender styles with radiating tips; stigma capitate.—*J. D. H.*

Fig. 1, Flower; 2, carpels and hypogynous glands:—*both magnified.*

TAB. 7931.
COTYLEDON UNDULATA.
Native of South Africa.

Nat. Ord. CRASSULACEÆ.

Genus COTYLEDON, Linn.; (*Benth. et Hook. f. Gen. Plant.* vol. i. p. 659.)

COTYLEDON (§ Paniculatæ) *undulata*; species adhuc imperfecte cognita, *C. orbiculatæ*, Linn. (*Bot. Mag.* t. 321) affinis, a qua differt foliis obovato-spathulatis apice rotundatis vel fere truncatis grosse undulato-crenatis cuspidatisque; frutex erectus, carnosus, albo-farinosus, caule subsimplici cum inflorescentia circiter 3-pedali, foliis oppositis, internodiis brevibus vel brevissimis, crassis carnosis $3\frac{1}{2}$ –5 poll. longis maximis supra medium $2\frac{1}{2}$ poll. latis margine in parte superiore interdum rubrescente, pedunculis 12–18 poll. longis nudis vel foliis paucis parvis ovatis subacutis infra medium instructis, floribus subdichotomo-cymosis longe pedicellatis pendulis circiter $1\frac{1}{2}$ poll. longis luteo-rubris, calycis segmentis parvis deltoideis subacutis, corolla tubo cylindrico lobis duplo longioribus, lobis acutis recurvis, staminibus vix exsertis, carpellis 5 glabris, stylis stamina vix æquantibus.

C. undulata, Haw. *Suppl. Pl. Succ.* (1819), p. 20 ("Plantæ Kewenses solum juveniles"); *Revis Pl. Succ.* (1821) p. 20 ("Simulat *C. orbiculatæ*, at longe humilior, foliis incipientibus apice magis undulatis cuspidatisque"). DC. *Prod.* vol. iii. p. 396 (sine florum descriptione). Harv. & Sond. *Fl. Cap.* vol. ii. 377 ("probably a form of *C. orbiculata*"). Schönland & E. G. Baker in *Journ. Bot.* 1902, pp. 13 et 17, t. 431.

Cotyledon foliis latis undulatis, &c., *Burm. Rar. Afr. Pl. Dec.* p. 44, t. 19, fig. 2?

As the above references and quotations show, *Cotyledon undulata* was first partially described by Haworth in 1819, from young plants at Kew; but he adds nothing of importance to that description in 1821, although a flowering specimen in his herbarium, now at Oxford, is labelled: "Kew, June, 1820." A drawing of his specimen, by Miss M. Smith, with a copy of all the writing on the sheet on which it is mounted, is in the Kew Herbarium; and in the collection of old Kew drawings there is a fine, bold, coloured figure of this species dated: "Kew, May 23rd, 1825." The drawing is endorsed: "Raised from seeds in 1817, received from Mr. Bowie from the Cape of Good Hope."

Apparently Haworth never described the flowers of *C. undulata*, but there is no doubt that his specimen and the old Kew drawing represent the same species. And there is little doubt that our plant is the same species, though the flowers are purple in the original drawing, the segments of

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the perianth more revolute, and the stamens distinctly exserted; all of which may, perhaps, be accounted for by the advanced stage of the inflorescence. But the South African species of *Cotyledon* are generally badly defined, as is fully exemplified by Baker and Schonland's paper in the *Journal of Botany*, cited above; the one working with the advantage of Haworth's types before him, and the other in South Africa with living plants under observation, they were still unable to define the limits of the species allied to *C. orbiculata*, Lindl., and could only suggest, in many instances, that certain specimens and figures represented the same species.

Haworth cites, in the first instance, Burman's *Cotyledon foliis latis sinuosis*, &c. (*Rariorum Africanarum Plantarum Decades*, p. 44, t. 19, fig. 2) as synonymous with his *C. undulata*; but he subsequently cited it with the sign of interrogation. Lamarck (*Encycl.* vol. ii. p. 142) founded his *C. mucronata* on the same figure. Schonland and Baker, Jun. (*Journ. Bot.* 1902, p. 15), regard *C. mucronata* as distinct from *C. undulata*, and describe a specimen from Graaf Reinet as belonging to the former. Burman's figure was evidently drawn from a plant bearing an inflorescence in a very advanced stage; but I think myself, judging from the variation in the colour and position of the flowers at different stages of development, that *C. undulata* and *C. mucronata* may be the same.

C. orbiculata was figured in the Magazine (t. 321) as long ago as 1795, and it is recorded by Aiton (*Hort. Kew* ed. 1, vol. ii. p. 106) as having been introduced by a Mr. Bentick in 1690.

A century ago these showy and easily cultivated succulent shrubs were much in favour, and they certainly deserve more attention than they get at the present time. Curtis wrote of *C. orbiculata* that it flowered freely and grew rapidly.

Our plate was prepared from a specimen received from Mr. R. I. Lynch, Curator of the Cambridge Botanic Garden.

It may be added that *C. gibbiflora*, Moc. & Sessé, a Mexican species of the section *Echeveria*, having foliage similar to that of our plant, is sometimes met with under the name of *C. undulata*.

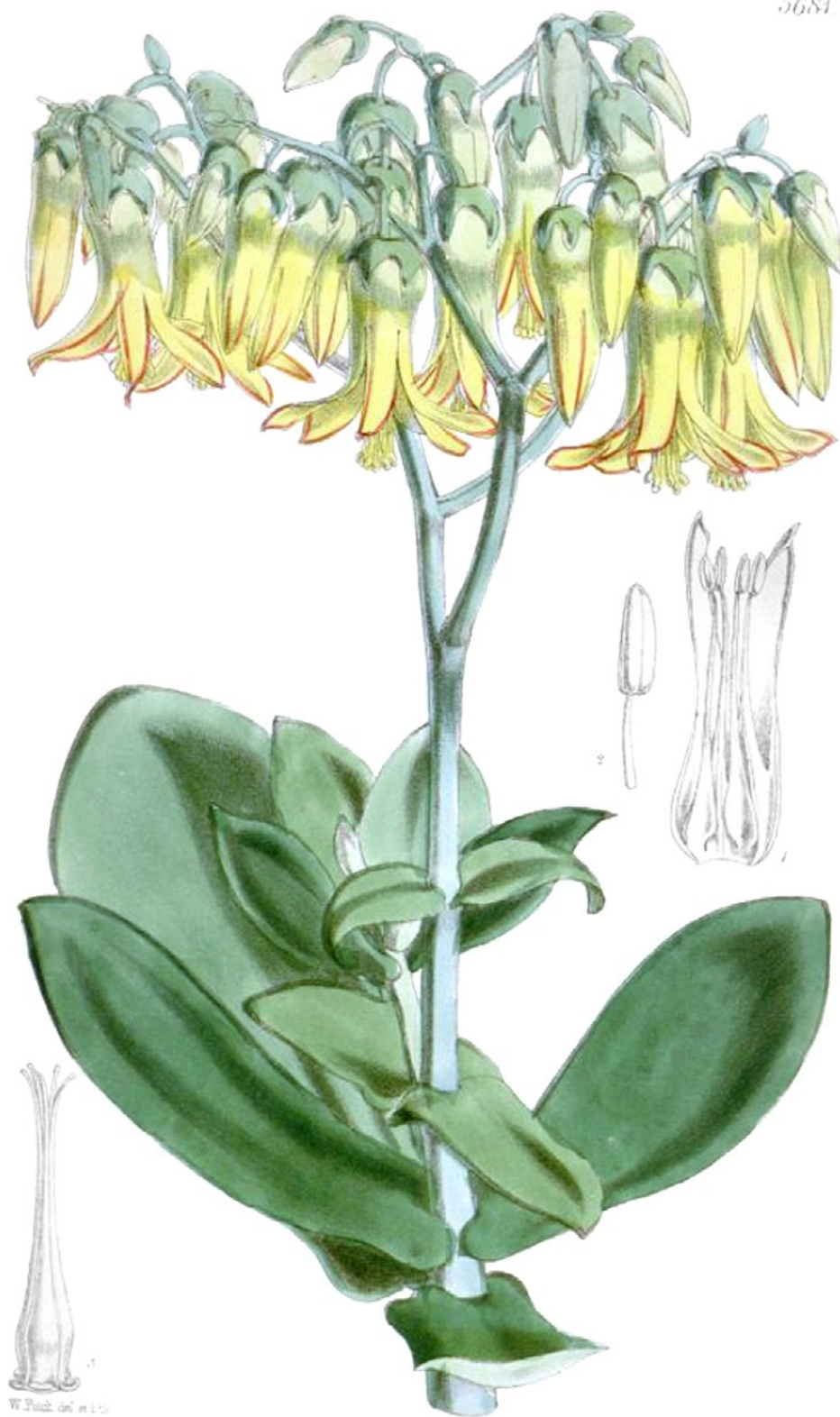
Descr.—A succulent, erect shrub, two to three feet high, the young parts covered with a white meal. *Leaves* opposite, crowded, very thick and fleshy, obovate-spathulate, three and a half to five inches long, the largest two and a half inches broad above the middle, rounded at the top or almost truncate, usually undulate-crenate above the middle with a terminal cusp; margin often red in the older leaves. *Peduncles* twelve to eighteen inches long, naked or bearing a few small, ovate, somewhat acute leaves below the middle. *Flowers* borne in paniculate cymes about six inches in diameter, one and a half inch long, yellow and orange-red, pendulous. *Pedicels* usually shorter than the flowers. *Calyx-lobes* small, deltoid, sub-acute. *Corolla-tube* cylindrical, twice as long as the recurved, acute lobes. *Stamens* scarcely overtopping the recurved corolla-lobes. *Carpels* five (ripe ones not seen) glabrous; styles scarcely as long as the stamens.—*W. B. H.*

Fig. 1, a petal and three stamens; 2 and 3, anthers; 4, gynæceum; 5, a young plant about one-sixth of the natural size:—*all the other figures enlarged.*

COTYLEDON VELUTINA.

Velvety-leaved Cotyledon.

Nat. Ord. CRASSULACEÆ.—DECANDRIA PENTAGYNIA.

Gen. Char. (Vide supra, TAB. 5602.)

COTYLEDON *velutina*; ramulis foliisque junioribus velutino-pubescentibus, caule erecto tereti, foliis oppositis obovato- v. subpandurato-oblongis obtusis integerrimis basi cordato-amplexicaulibus crassis enerviis viridibus marginibus apices versus brunneis, panicle corymbosa ramis subhorizontalibus, floribus magnis pendulis pedicellatis, calycis lobia ovato-triangularibus corollæ tubo pallide virescente multo brevioribus, corollæ lobis lineari-oblongis subacutis patentibus flavis purpureo-marginatis, filamentis basi dilatatis.

This is another of the noble South African plants introduced by W. W. Saunders, F.R.S., of Reigate, through his energetic collector, Mr. Cooper, and liberally presented, in 1858, to the Royal Gardens, where it is, when in flower, a great ornament to the Succulent House. As a species, it approaches, firstly, *C. cuneata*, Thunb., in the form of the leaves, differing, however, in their being semiamplexicaul at the base, and in not being hispid; and secondly, *C. tomentosa*, Harv., which is a slender, more densely pubescent plant, with subpetioled leaves.

The genus *Cotyledon* contains upwards of twenty Cape species, described in Harvey and Sonder's 'Flora Capensis,' and that this number must fall far short of the total South African species, is evident from this being the second that has flowered since the publication of those descriptions (1862), and been figured in the 'Botanical Magazine' (see Tab. 5602). Amongst the species are some with the most beautifully-coloured foliage, and others with very handsome flowers, and which, together with the facility with which they are cultivated in dwelling-houses or small greenhouses, if even of indifferent construction, renders them well adapted for supplying the horticultural requirements of the less

wealthy and even the poorer classes who inhabit the outskirts of our great towns. A distribution of such succulent plants as these, would give far more enduring pleasure to the poorer classes, than the Geraniums and Verbenas of the parks, given away at the end of the season, when it is almost impossible to keep them alive without heat and glass, and quite impossible to flower them.

DESCR. A stout, succulent perennial, two to three feet high, with rather glaucous, terete stem and scape, and dark-green foliage; *young leaves* and *shoots* covered with a fine velvety pubescence. *Leaves* opposite, rather crowded, decussate, three to five inches long, oblong-obovate or subpanduriform, obtuse, cordate and semiamplexicaul at the base, very thick, quite smooth, even, nerveless; margins quite entire, edged with brown towards the tip. *Scape* erect, strict. *Panicle* subcorymbose, flat-headed, branched, open; branchlets nearly horizontal. *Flowers* pedicelled, pendulous. *Calyx* broad, green, with short, deltoid teeth. *Corolla-tube* one inch long, pale green below, yellow above; *lobes* as long as the tube, linear-oblong, subacute, spreading, bright yellow, with purple margins. *Stamens* exserted; *filaments* very broad at the base; *anthers* striate. *Squamulæ* connate, short, spreading. *Styles* filiform.—*J. D. H.*

Fig. 1. Lobes of corolla and stamen. 2. Stamen. 3. Ovary:—*all magnified.*

CRASSULA BARKLYI.

South Africa.

CRASSULACEAE.

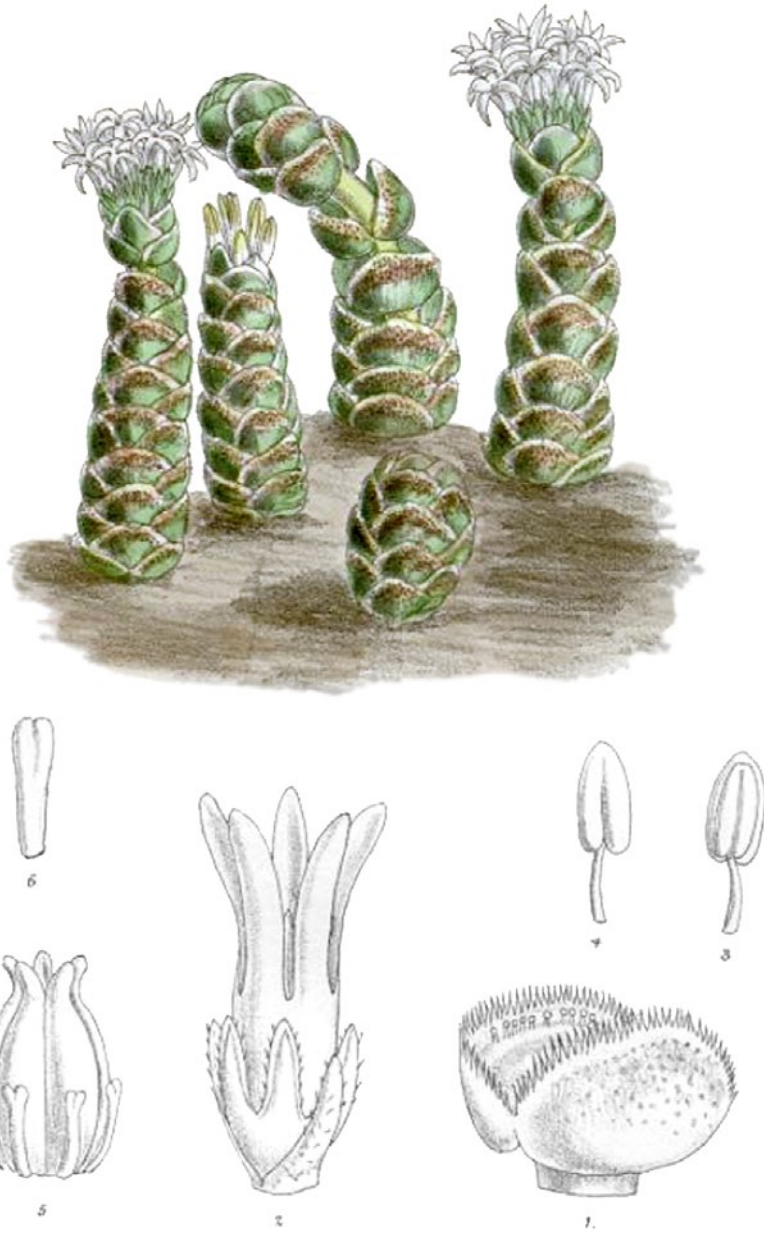
CRASSULA, Linn.; Benth. et Hook. f. Gen. Plant. vol. i. p. 657.

Crassula Barklyi, N. E. Brown in Kew Bulletin, 1906, p. 19; affinis *C. columnari*, Linn. f., sed minor et foliis tenuioribus ciliatis suberectis differt.

Herba succulenta. Caulis 2·5–5 cm. altus, simplex vel basi ramosus, cum foliis basi 1·2–1·8 cm. crassus, superne leviter attenuatus, obtuse tetragonus. Folia opposita, decussata, arcte imbricata, suberecta, basi connata, transverse elliptico-oblonga vel late lunata, obtusissima, dorso convexa, carnosa, marginibus acutis ciliolata, brunnea, punctata, inferiura 0·5–0·6 cm. longa, 1·2–1·3 cm. lata, superiora gradatim minora. Flores terminales, dense capitati, subsessiles. *Sepala* lineari-spathulata, obtusa, glabra, minute ciliata, 3 mm. longa. *Corolla* gamopetala, profunde 5-loba, glabra, alba (rubro-tincta?); tubus 2–2·5 mm. longus; lobi 6–7 mm. longi, lineares, obtusi, apice recurvo-patuli. *Stamina* 5, inclusa, ore tubi inserta; filamenta 1 mm. longa; antherae 1 mm. longae, oblongae. *Squamae hypogynae* 1 mm. longae, erectae, lineari-cuneatae, truncatae vel emarginatae, canaliculatae. *Carpella* 5, basi connata, erecta, stricta, subteretia, superne vix angustata.—N. E. BROWN.

The somewhat peculiar *Crassula* here figured was originally discovered in Little Namaqualand by the late Sir Henry Barkly, who communicated it to Kew in 1875. The plants here figured were received at Kew from Professor H. H. W. Pearson, of Cape Town, in January, 1911; they formed part of a collection made during the Percy Sladen Expedition, and were found by Mr. Pillans, a member of the party, on a ridge four miles to the south-east of Bakhuis. Grown in a house devoted to succulent plants, these specimens flowered in March, 1911. While under these conditions the flowers produced have been white, there is reason to think that when fully exposed to sun and air in their native habitat the petals assume a reddish tinge. The sterns too, as compared with those of the specimens collected by Barkly, are unusually long; the original ones are only 1–1¼ inches high. Like other species of *Crassula* with a compact pyramidal habit, *C. Barklyi* is of slow growth and is prone, after flowering, to lose its vigour. The requirements of this and its nearer allies are best met

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by supplying dry tropical conditions and a sandy soil. Of these allies the most nearly related appears to be *C. columnaris*, Linn. f., from which, however, *C. Barklyi* is readily distinguished by the characters mentioned by Mr. Brown.

DESCRIPTION.—*Herb*, succulent; stem 1–2 in. in height, simple or branching at the base, including the leaves $\frac{1}{2}$ – $\frac{2}{3}$ in. thick at the base, slightly narrowing upwards and bluntly 4-angled throughout. *Leaves* opposite, decussate, closely imbricate, almost erect, connate at the base, the lower 2–3 lin. long, 6–7 lin. wide, gradually diminishing upwards. *Flowers* terminal, densely capitate, nearly sessile. *Sepals* linear-spathulate, obtuse, with finely ciliate margins but elsewhere glabrous. *Corolla* gamopetalous, deeply 5-lobed, glabrous, in cultivated specimens white; tube about 1 lin. long; lobes 3 lin. long or longer, linear, obtuse, with recurved spreading tips. *Stamens* 5, included, attached to the mouth of the tube; filaments and long anthers both very short. *Hypogynous scales* very short, erect, linear-cuneate, truncate or emarginate, channelled. *Carpels* 5, connate below, erect, strict, almost terete, hardly narrowed upwards.

Fig. 1, a pair of leaves; 2, a flower; 3 and 4, stamens; 5, carpels and hypogynous scales; 6, a single hypogynous scale:—*all enlarged*.

TAB. 6194.

CRASSULA BOLUSII.

Native of South Africa.

Nat. Ord. CRASSULACEÆ.

Genus CRASSULA, Linn. (*Benth. and Hook., f. Gen. Pl., v. i., p. 657.*)

CRASSULA (Squamulosæ) *Bolusii*; parvula, diffuse ramosa, ramis gracilibus laxe foliosis adscendentibus teretibus sparse patentibus pilosis apice floriferis, foliis $\frac{1}{2}$ poll. longis patulis elliptico-lanceolatis acutis marginibus ciliatis ceterum glaberrimis radicalibus pollicaribus lineari-spathulatis omnibus carnosus dorso semiteretibus facie convexis viridibus nigro maculatis v. fasciatis, floribus corymbosis $\frac{1}{6}$ unc. diameter, breviter pedicellatis, calycis segmentis ovatis acutis ciliatis, petalis oblongis subacutis dorso infra apicem mucronulatis carnis, glandulis hypogynis brevibus emarginatis, carpellis ovoideo-lanceolatis in stylis breves attenuatis, stigmatibus punctiformibus.

A very pretty little Cape succulent, apparently not included in Harvey and Sender's Cape Flora. It was discovered by Mr. H. Bolus, near Graafrinet, who sent both living and dried specimens to Kew. As a species it is closely allied to *C. Cooperi* (Regel Gartenfl., 1874, p. 36, t. 786), a widely distributed Cape species, but differs in the less straggling habit, much longer and narrower radical leaves, and in the dark blotches on the foliage.

The specimen here figured is from plants sent to Kew by Mr. Bolus in 1874, which flowered in the Succulent House in July of the present year.

DESCR. A small, bright green, tufted, perennial herb. *Stems* ascending, three to five inches high, slender, leafy at the base, sparingly so higher up, very sparsely clothed with spreading short white hairs. *Leaves* fleshy, pale green, with dark, almost black blotches, one-third to one-half inch long, elliptic-lanceolate, acute, the lowest often one inch long, and more or less spathulately oblanceolate, upper surface convex, the lower almost semiterete, margin with a row of white rather recurved cilia, otherwise perfectly glabrous. *Flowers* very small, one-sixth inch diameter, in terminal corymbose cymes, very shortly pedicelled. *Calyx-segments* ovate, acute, red, ciliate. *Petals* twice as long, oblong-lanceolate, acute, with a dorsal mucro near the top, pale



flesh-colour. Anthers red. *Hypogynous glands* small, yellow, notched. *Ovaries* ovoid-lanceolate, narrowed into very short straight styles with minute stigmatic tips.—*J. D. H.*

Fig. 1. Portion of branch and part of leaves; 2, flowers; 3, petal; 4, stamens, glands, and carpels; 5, carpels and glands:—*all magnified.*

CRASSULA CENTAUROIDES. CENTAURY-
FLOWERED CRASSULA.

Class and Order.

PENTANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-phyllus. *Petala* 5. *Squamæ* 5, nectariferæ ad basin germinis. *Capf.* 5.

Specific Character and Synonyms.

CRASSULA *centauroides*; caule herbaceo dichotomo, foliis sessilibus oblongo-ovatis cordatis planis, pedunculis axillari-
bus unifloris. *Hort. Kew.* 1. p. 392.—*ed. alt.* 2. p. 194. *Willd.*
Sp. Pl. 1. 1555. *Haworth Succul.* 57.

CRASSULA *centauroides*; caule herbaceo dichotomo, foliis
cordatis sessilibus, pedunculis unifloris. *Sp. Pl.* 404. *Amæn.*
Acad. 6. p. 85. (caule brachiato. *Mantissa* 361.) *Syst. Veg. ed.*
14. p. 305. *Reich. Sp. Pl.* 1. 772.

SEDOIDES africana annua centauroides. *Herm. Parad.* 169.



DESCR. *Root* annual or biennial. *Stems* prostrate, smooth, of a pale red colour, pellucid on the surface, opaque at the centre, branched: *lower branches* going off at right angles, or brachiate: *upper ones* dichotomous. *Leaves* opposite, ovate, flat, stem-embracing, margin red, somewhat denticulate, from a row of excavated dots on the under side. *Peduncles* axillary, solitary, one-flowered, erect at first, but reflected after the flowering is over. *Calyx* persistent, five-cleft: *segments* acute. *Corolla* five-petalled, when first expanded not unlike that of the lesser Centaury: *petals* ovate-acuminate, bright crimson at the point shaded off to white at the base. *Filaments* green, inserted into the receptacle below the germen, not into the claws of the petals, with which they alternate. *Anthers* yellow. *Germens*

Germens five, cohering: *styles* divaricate. No nectariferous scales were observable.

There is considerable affinity between this species and *pelucida*, and it is not improbable that they have been sometimes confounded. But in the latter plant, as described and figured by DILLENIIUS, the leaves are much thicker, collected into rosettes, and do not stand in distant pairs, as in this.

That our plant is the *CRASSULA centauroides* of the Hortus Kewensis we are sure, having compared it with a specimen preserved in spirits of wine in the Banksian Museum.

We know of no figure existing of this species which, from the brilliancy and long duration of its flowers, so well deserves a place in every collection of succulent plants. It is considered as an inhabitant of the dry stove, but will do very well in the greenhouse, or even in the window of a light apartment.

Native of the Cape of Good-Hope. Propagated by seeds, which, in favourable seasons, are freely produced. Flowers from May to July. Communicated by Messrs. LODDIGES and SONS.

CRASSULA COCCINEA. SCARLET-FLOWERED
CRASSULA.

Class and Order.

PENTANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-phyllus. *Petala* 5. *Squamæ* 5, nectariferæ ad basin germinis. *Capf.* 5.

Specific Character and Synonyms.

CRASSULA *coccinea* foliis ovatis planis cartilagineo-ciliatis, basi connato-vaginantibus. *Linn. Syst. Vegetab. ed.* 14. *Murr. p.* 304. *Mant.* 360. *Ait. Kew. v.* 1. *p.* 390

COTYLEDON *africana* frutescens, flore umbellato Cocci neo. *Comm. Rar.* 24. 1. 24. *Bradi. Succ.* 5. *p.* 7. 1. 0.

COTYLEDON, *africana* frutescens flore cameo atnplo. *Breyn. Prodr.* 3. *p.* 30. *t.* 20. *f.* 1.



L. Edwards del. Pub. by W. Curtis Sc. (See Catalogue Vol. 1. 1801. p. 200.)

We have no doubt but that when this superb species of Crassula was first introduced from the Cape by Prof. BRADLEY, of Oxford, in 1714, it was regarded as a kind of a Merveil de la Nature; even now that it is common, we scarcely know any succulent that is superior to it, whether we regard its grandeur, the curious growth of its leaves, or the rich colour of its scarlet blossoms, readily produced on plants of a moderate size.

It flowers during the months of July, August, and September; is readily propagated by cuttings, and requires the same treatment as other tender succulents; Mr. AITON regards it as a dry stove plant; in the summer it should be placed in the open air.

CRASSULA COTYLEDON. TREE CRASSULA.

Class and Order.

PENTANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-phyllus. *Pet.* 5. *Squamæ* 5, nectariferæ ad basin germinis. *Capf.* 5 polyspermæ.

Specific Character and Synonyms.

CRASSULA *Cotyledon* foliis subrotundis carnosissimis supra punctatis, caule arboreo. *Linn. Syst. Vegetab. ed. 14. Murr. Ait. Kew. v. 1. p. 393. Jacq. Miscell. 2. p. 295. t. 19.*

COTYLEDON *arborescens* caule ramoso succulento foliis obverse ovatis emarginatis marginibus purpureis *Mill. Dict. ed. 6. 4to.*



In the habit of this plant, but more especially in its foliage, there exists a great similarity to the *Cotyledon orbiculata*, figured t. 321 of this work; there will be found however to be a very great difference in the form of their flowers, those of the *Crassula* resemble the flowers of a *Sedum*; to which genus, indeed, it has great affinity, but a singular trait in this plant is its indisposition to flower; Mr. FAIRBAIRN informs me, that he never saw it produce blossoms in Chelsea Garden till the present summer; Mr. MILLER never saw it flower, nor does it appear that Mr. AITON ever did. At Chelsea Garden there are several plants of this species, some of which form small trees; one of those, but not the oldest, produced this summer several bunches of flowers, which continued during May and June: in the treatment of these plants there has been no variation, they are constantly kept in a glasscase with other succulents.

It is a native of the Cape, and was cultivated by MILLER in 1739*. Is readily increased by cuttings.

* Ait Kew.

N1940.

(1940)

CRASSULA CULTRATA. SHARP-LEAVED
CRASSULA.

Class and Order.

PENTANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-phyllus. *Petala* 5. *Squamæ* 5, nectariferæ ad basin germinis. *Capsulæ* 5.

Spetic Character and Synonyms.

CRASSULA *cultrata*; foliis oppositis obovatis subcultratis obliquis connatis integerrimis. *Hort. Kew. ed.* 1^{ma} 1. n. 393. *ed. alt.* 2. p. 192. *Willd. Sp. Pl.* 1. p. 1552. *Mart. Mill. Dict. n.* 11. *Trew. Pl. Rar.* 2. p. 3. t. 12.

CRASSULA *cultrata*. *Syst. Vegetab. ed.* 14. p. 305. *Thunb. Prod.* 56. *Sp. Pl.* 405.

CRASSULA *anacampserotis* folio. *Dill. Elth.* 115. t. 97. f. 114.

GLOBULEA *cultrata*. *Haworth Succul.* 60.



2nd by 3rd Carter Walcott H. 1841 187

Walden 1840

The flowers of *CRASSULA cultrata* never expand, and the petals bear a globular gland at their apex: on account of which character, Mr. HAWORTH in his Synopsis Plantarum Succulentarum, has thought fit to separate this species with three others from *CRASSULA*, under the name of *GLOBULEA*.

CRASSULA cultrata comes under the division of *frutescentes*. Native of the Cape of Good-Hope. Cultivated in Dr. SHERARD's garden, at Eltham, in 1732. Is usually kept in the dry stove. Propagated by cuttings. Flowers in August, September, and October. Our drawing was taken some years ago from a plant in the possession of Mr. SYDENHAM EDWARDS.

(2035)

CRASSULA FALCATA. SICKLE-LEAVED

CRASSULA.

Class and Order.

PENTANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-phyllus. *Petala* 5. *Squamæ* 5, nectariferæ ad basin germinis. *Caps.* 5.

Specific Character and Synonyms.

CRASSULA *falcata*; foliis oblongis falcatis glaucis obtusis basi connatis. *Hort. Kew. ed. alt.* 2. p. 191.

CRASSULA *obliqua*. *Bot. Repos.* 414.

CRASSULA *retroflexa*. *Meerb. ic.fasc.* 2. p. 16.

ROCHEA *falcata*. *Plant. Grass.* 103.

LAROCHEA *falcata*. *Persoon Syn.* 1. p. 337.

A figure of this plant having been given by Mr. ANDREWS, in the Botanist's Repository, erroneously for *Crassula obliqua*, it is generally known by that name in our nurseries.

The eminent botanist M. DECANDOLLE, in his *Plantes grasses*, has separated this species and *CRASSULA coccinea* from the rest of the genus, and erected them into a new genus under the name of ROCHEA, altered in PERSOON'S synopsis to LAROCHEA, being dedicated to the memory of M. DE LA ROCHE, author of a monograph on *Ixia* and *Gladiolus*. This, genus has been adopted by Mr. HAWORTH, who has doubtingly added to it three other species, but as all of them, as far as appears by the character, differ in nothing from *CRASSULA* but in the cohesion of the petals at their base, and the genus is not taken up in the last edition of the *Hortus Kewensis*, we have judged it better to retain the name given it in the last-mentioned work.

In our specimen the nectariferous scales were quite obsolete, but as these make part of the character of the genus LAROCHEA, the want of them is probably not general.

A Greenhouse



A Greenhouse shrub, or more properly kept with other succulents in the dry stove. Native of the Cape of Good Hope. Blooms at most seasons of the year. Our drawing was made in December. Flowers very fragrant, much resembling honey-suckles. Propagated by cuttings. Introduced about the year 1785. Communicated by Messrs. LODDIGES and SONS.

ERRATA.

No. 381, p. 2019, l. 21, *for* “Prof. JAMES E. SMITH,” *read* “Sir JAMES E. SMITH.”

No. 382, p. 2025, l. 5, *for* “South,” *read* “North.”

l. 7, *for* “South,” *read* “North.”

p. 2028, l. 25, *for* “generally,” *read* “generically.”

CRASSULA JASMINEA. JASMINE-FLOWERED
CRASSULA.

Class and Order.

PENTANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-phyllus. *Petala* 5. *Squamæ* 5, nectariferæ ad basin germinis. *Caps.* 5.

Specific Character and Synonyms.

CRASSULA *jasminea*; caule suffruticoso decumbente, foliis ovatis cruciatis, capitulo terminali bifloro, unguibus petalorum superne connatis.

CRASSULA *jasminiflora*. *Haworth Mss.*

DESCR. *Stem* herbaceous, decumbent, branched, flowering part assurgent. *Leaves* opposite-crosswise, fleshy, oblong-oval, margins cartilaginous-denticulate. *Flowers* terminal, generally two, sessile, not scented. *Calyx* 5-cleft: *Segments* erect, acute, and, as well as the leaves, of a dull red colour at the tips. *Tube* of the *corolla* more than an inch long, formed by the claws which are united at the upper part, but distinct below: *Limb* spreading, scarcely a third part so long as the tube, white, tipped with crimson. *Stamens* 5, inclosed within the tube. *Germens* 5, oblong: *Styles* approximated: *Stigmas* pubescent.

Mr. HAWORTH had given it the name of *jasminiflora*; which, not having been published, we have by the advice of Sir JAMES SMITH altered it to *jasminea*, as more elegant.

Native of the Cape of Good-Hope, raised from seeds imported from that country, in the Chelsea garden by Mr. ANDERSON. Flowers in June. Requires the protection of the greenhouse in the winter months.



CRASSULA LACTEA. WHITE CRASSULA.

Class and Order.

PENTANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-phyllus. *Petala* 5. *Squamæ* 5, nectariferæ ad basin germinis. *Caps.* 5.

Specific Character and Synonyms.

CRASSULA *lactea*; caule fruticoso, foliis ovatis basi attenuatis connatis integerrimis intra marginem punctatis, cymis paniculæformibus. *Hort. Kew. ed. 1^{ma} 1. p. 396. ed. alt. 2. p. 193. Smith Exot. Bot. 1. p. 63. t. 33. Willd. Sp. Pl. 1. p. 1554. Mart. Mill. Dict. n. 62. Plant. Grass. 37.*

CRASSULA *lactea*; foliis obovatis subciliatis albo-punctatis, panicula trifida. *Thunb. Prodr. 56.*



A native of the Cape of Good-Hope, and directed to be kept in the dry stove, as it requires to be protected from a damp atmosphere, as well as from frost. As with all other succulent plants, great care should be taken to water it very sparingly during the winter. A light rich loam with old lime rubbish is recommended as the best soil.

Propagated by cuttings, which should be laid in a dry place for a fortnight before they are planted, that part of their juice may be evaporated, then put into pots of light sand, and plunged into a hot-bed, watering them very sparingly, otherwise they will rot. When they have taken root, which will be in about six weeks, they should be gradually inured to the open air.

Introduced by Mr. FRANCIS MASSON, in 1774, from the Cape Flowers in September and October. Communicated by Mr. GORGE GRAVES, of Walworth, who possesses a very extensive collection of succulent plants.

TAB. 6044.

CRASSULA PROFUSA.

Native of South Africa.

Nat. Ord. CRASSULACEÆ.

Genus CRASSULA, Linn.; (*Benth. and Hook. f. Gen. Pl.*, vol. i. p. 657).

CRASSULA (Perfilata) *profusa*; glaberrima, vix glauca, profuse ramosa, ramis dependentibus et repentibus teretibus, foliis imabasi connatis orbiculari-ovatis acutis carnosus dorso convexis, margine integerrimo badio-limbato superne serie intramarginali punctorum ornato, cymis breviter pedunculatis capitatis, calycis segmentis linearibus, petalis ovatis acutis albis, stylis divergentibus, glandulis hypogynis brevissimis.

A free-flowering and remarkably ramosus species of *Crassula*, sent from the Graaf Reinett district of the Cape Colony by Harry Bolus, Esq., who has contributed many new and curious plants to both the Gardens and Herbarium at Kew. It approaches the *C. perfossa*, Lam., and *C. perforata*, Linn., but differs from both in habit, in the only slightly connate leaves, and longer narrow calyx lobes; it is still nearer *C. marginata*, Ait., with which it further agrees in habit, but the leaves are not broadly connate, and are green (not purple) beneath. The structure of the leaf is very curious. The margin, which is quite entire, is edged with a narrow band of chestnut-brown, within which is a series of orbicular slightly convex punctiform disks. These disks, when highly magnified, are found to consist of a very dense cellular tissue, that terminates downwards in a conical form, and communicates with the peripheral ends of the nerves, in the loose parenchymatous substance of the leaf. The surface of the disk is studded with excessively minute stomata, of a different form from the other stomata on either surface of the leaf, the guard-cells of these stomata further contain on their outer edge a row of minute chlorophyll granules, giving them a most beautiful appearance. The same disposition of these disks occur in *C. lactea* and *C. marginata*, but not in *C. perforata*; their terminating the

JULY 1ST, 1873.



ultimate branches of the nerves indicates their performing an important function in the nutrition of the plant.

C. prolifera was raised from seed received in 1871 from Mr. Bolus, and now forms a profusely flowering mass of branches and leaves, two feet in diameter; it flowered from March to June of the present year.

DESCR. Quite glabrous, excessively branched; branches pendulous and creeping, one to two feet long, cylindric. *Leaves* sessile, half to three quarters of an inch long, orbicular-cordate, slightly connate at the base, acute or cuspidate, very thick and fleshy, slightly convex above, more so beneath, pale green on both surfaces, hardly glaucous, margins quite entire and glabrous, with a narrow chestnut-coloured border on the upper surface, within which is a series of minute points. *Flowers* white, in capitate peduncled cymes, which are about one inch in diameter, and subtended by two small orbicular fleshy bracts; pedicels a quarter to half inch long, turbinate at the apex. *Calyx* of five linear acute segments half as long as the petals. *Corolla* one-third of an inch in diameter, of five ovate acuminate free petals, tinged with pink at the back. *Stamens* hardly exceeding the styles; anthers yellow. *Hypogynous glands* very short and broad. *Carpels* five, ovoid, abruptly terminated by diverging styles with capitate stigmas.—*J. D. H.*

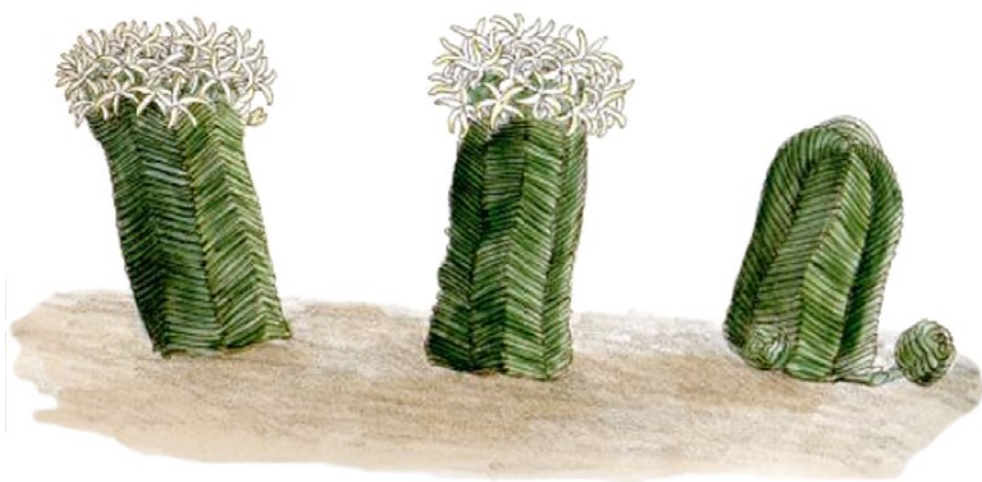
Fig. 1, Bud; 2, leaves; 3, flower expanded; 4, stamen; 5, ovaries and hypogynous glands:—*all magnified.*

TAB. 7665.

CRASSULA PYRAMIDALIS.

Native of the Cape of Good Hope.

Nat. Ord. CRASSULACEÆ.

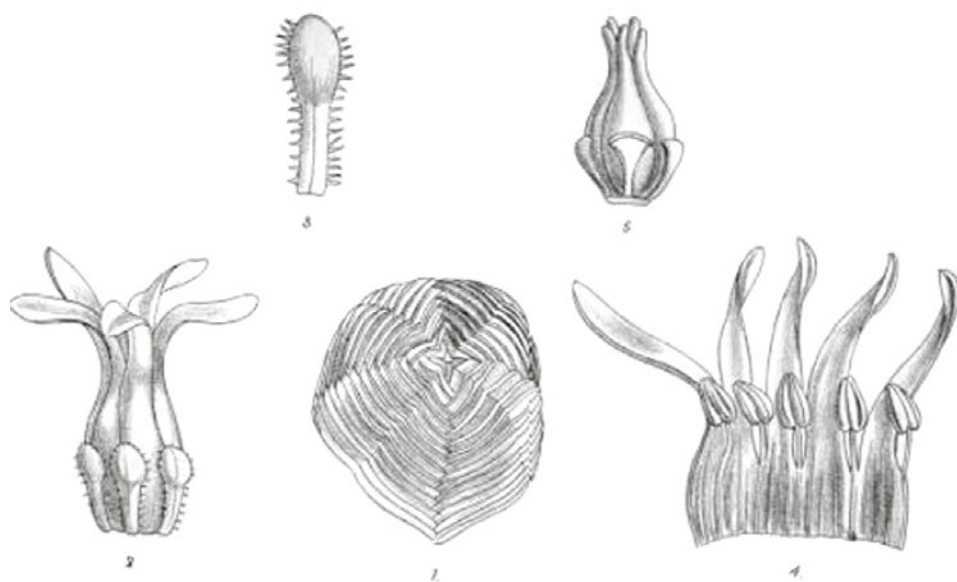
Genus CRASSULA, Linn.; (*Benth. & Hook. f. Gen. Plant.* vol. i. p. 657.)

CRASSULA (Pyramidella) *pyramidalis*; nana, caulibus 2–8 pollicaribus foliis omnino velatis cum foliis tetragonia simplicibus vel ramulis brevissimis instructis, foliis quadrifariam imbricatis horizontalibus arctissime imbricatis carnosulis triangulari-ovatis basi subcordatis liberis semi-amplexicaulibus marginibus puberulis, floribus pentameria, in capitula globosa terminalia $\frac{1}{2}$ –1 poll. diam. confertis albis pentameris, sepalis parvis anguste spathulatis marginibus ciliatis, corollæ glaberrimæ tubo ovoideo sepalis duplo longiore, lobis tubo longioribus linearibus obtusis recurvis, filamentis brevibus, antheris longiusculis ovato-oblongis, squamulis e stipite gracili sursum dilatatis truncatis rubro-aurantiacis, carpellis ovoideis, stylis brevibus.

C. pyramidalis, Linn. *f. Suppl.* p. 189. *Thunb. Fl. Cap.* p. 287, et in *Nov. Act. Nat. Cur.* vol. vi. p. 336, t. 5 b. *DC. Prodr.* vol. iii. p. 388. *Harv. et Sond. Fl. Cap.* vol. iii. p. 338. *Burbidge in Gard. Chron.* 1872, p. 289, fig. 108, et 1885, vol. i. p. 545, fig. 101 (*icon. iterat.*).

C. quadrangula, Endl. ex Walp. *Rep.* vol. ii. p. 253.

Tetraphyle *pyramidalis* & *quadrangula*, Eckl. & Zeyh. *Enum.* p. 292, 293.



The plant here figured is that known in gardens as *Crassula pyramidalis*, Linn. *f.* and of Thunberg's "Flora Capensis," but it differs from the description of these authors in the leaves being much larger than one line long, and not being connate, as also in the heads of flowers being sometimes upwards of an inch across, and not merely "larger than a pea." It is possible that in its native state the plant never assumes the size which it does under cultivation, but this small size would not account for the leaves being connate. It must be left to Cape botanists to settle the question by a visit to the spot where Thunberg discovered *C. pyramidalis*, namely, near Olifant's River, by the thermal springs, "(Juxta flum. Olyfant's orientalem, prope thermas," fl. Octob.). Other habitats given by Harvey in the "Flora Capensis" are Kar-roo, between Uitenhage and Graaf Reynet; Kleplaat river; JULY 1ST, 1899.

Driekoppen, Zwaanepoetsport berge, and Gamka river, all in the South-western region of the Cape Colony.

C. pyramidalis has been long in cultivation at Kew, where it flowers in the Succulent House in May and June.

Descr.—*Stems* two to three inches high, entirely hidden from base to tip by the leaves, which are most densely quadrifariously imbricate, together forming a rather acutely four-angled, green column. *Leaves* spreading almost horizontally, nearly half an inch broad, those of each series being closely appressed to one another, broadly triangular, with rounded sides, thinly fleshy, green, margins puberulous in a young state, base contracted and semi-amplexicaul, with a semi-lunar insertion. *Flowers* capitately corymbose, forming a sessile head an inch in diameter or less, pentamerous, very shortly pedicelled, white. *Sepals* very small, narrowly spathulate, with ciliate margins. *Petals* united below into a tube twice as long as the sepals; free portions as long as the tube, linear, obtuse, sub-flexuously spreading. *Stamens* inserted in the corolla-tube, filaments very short, anthers large, ovate-oblong. *Hypogynous scales* dilated upwards from a very narrow base, truncate. *Carpels* narrowed into short styles.—*J. D. H.*

Fig. 1, Top of stem and leaves; 2, flower; 3, sepal; 4, corolla laid open; 5, hypogynous glands and carpels:—*All enlarged.*

CRASSULA ROSULARIS.

Spreading-leaved Crassula.

Nat. Ord. CRASSULACEÆ.—PENTANDRIA PENTAGYNIA.

Gen. Char. Calyx profunde 5-fidus v. 5-partitus, rarius 6–9-partitus, laciniis erectis v. patentibus. Petala 5, rarius 6–9, libera v. basi connata, erecta, patentia v. recurva, apicibus glandulosus. Stamina 5, rarius 6–9, petalis breviora. Squamæ hypogynæ, variæ. Ovaria 5, rarius 6–9, in stylos breves attenuata, stigmatibus capitellatis. Folliculi 5, polyspermi.—Suffrutices fruticesve, rarius herbæ, plus minus crassæ v. carnosæ. Folia opposita, connata v. dense rosulata, rarius petiolata, sæpius cartilagineo-serrulata. Flores sæpius parvi, albi flavi v. rubri, in cymas varie dispositi.

CRASSULA rosularis; herbacea, estolonifera; foliis omnibus radicalibus dense rosulatis patentibus imbricatis oblongo-lanceolatis ligulatis v. spathulatis planis glabris cartilagineo-ciliatis, pedunculis scapiformibus erectis striatis, cymis oppositis multifloris subcapitatis, bracteis lineari-oblongis, floribus parvis albis, petalis patentibus acutis.

CRASSULA rosularis. Harv. Rev. p. 13. Harv. and Sond. Fl. Cap. v. 2. p. 350.

One of the many curious succulents once so generally cultivated in our greenhouses, but which have of late years either been banished from our houses or are confined to botanical establishments. Whether these will ever attain their former popularity is doubtful, though when we consider the remarkable forms they assume, and that their fine evergreen foliage is as ornamental in our houses in winter as in summer, we cannot doubt that they will again claim an honourable place in the conservatory. As it is, few places are more attractive to the winter visitors to the Royal Gardens than its richly-stored succulent-house. The present species is a native of South Africa, extending from Natal to Graham's Town, from whence the plants from which our figure was taken were sent by our valued friend Henry Hutton, Esq., of Graham's Town.

DESCR. Aglabrous perennial, with creeping rhizomes sending out no stolons. Leaves densely crowded into radical rosulate

AUGUST 1ST, 1863.



crowns, linear-spathulate, subacute, plane, thick and fleshy, with minute cartilaginous cilia at the edges. *Scapes* numerous, stout, erect, bearing numerous opposite, peduncled, subcapitate, very many flowered *cymes*. *Flowers* very small, white. *Petals* oblong, spreading.

Fig. 1. Margin of leaf. 2. Flower. 3. Ditto, calyx removed. 4. Ovary and squamule:—*all magnified*.

CRASSULA SAXIFRAGA.

Native of South Africa.

Nat. Ord. CRASSULACEÆ.

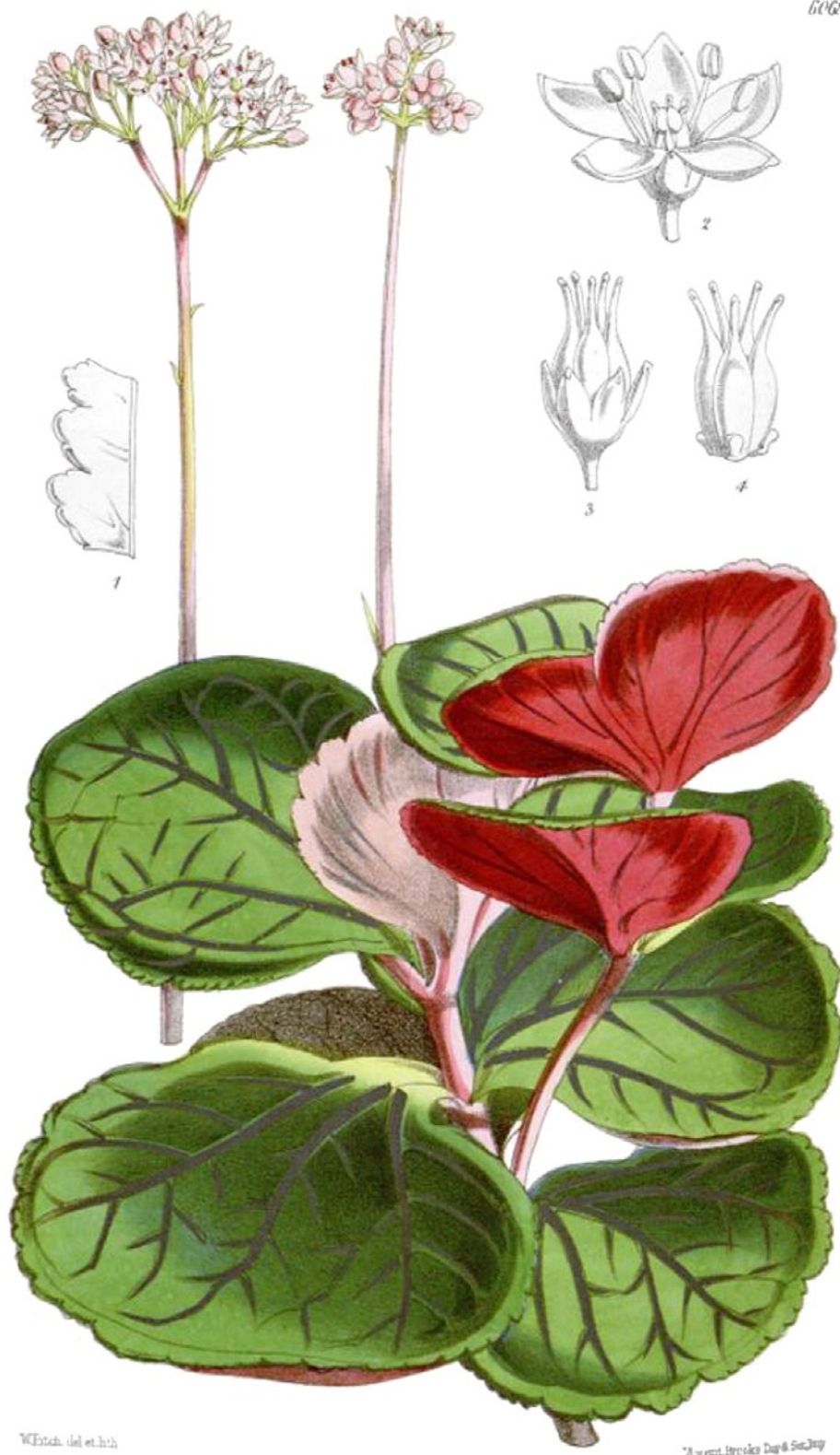
Genus CRASSULA, Linn.; (*Benth. & Hook. f. Gen. Pl.*, vol. i. p. 657).

CRASSULA (Tuberosa) *Saxifraga*; glaberrima, radice tuberoso, caule breviusculo simplici v. ramoso, foliis paucis amplis oppositis breviter petiolatis orbiculatis subreniformibusve coriaceo-carnosis lobulatis, lobulis crenulatis subtus sanguineis v. viridibus, pedunculis terminalibus elongatis gracilibus, cymis parvis multifloris corymbosis, sepalia 5 ovatis dorso infra apicem glandulosis petalis ovato-oblongis acutis ter brevioribus, squamis hypogynis minutis, carpellis oblongis in stylos recto breviusculos attenuatis.

CRASSULA *Saxifraga*, Harv. in Harv. & Sond. *Flor. Cap.*, vol ii. p. 357.

For this very singular and brilliantly coloured S. African plant the Royal Gardens are indebted to Principal MacOwan, of Gill College, Somerset East, who transmitted tubers of it from that district, which flowered in June of the present year. It would seem to have a wide South African distribution, being found on mountain sides from the extreme south-west, as on the Muysenberg mountain, near Simon's bay, to Port Elizabeth and Albany. It is nearly allied to *C. Septas*, Thunb., which is a small plant, with fewer very much larger umbellate long-pedicelled flowers that have six to nine narrow petals. The *Septas globifera* of this Magazine (Tab. nost. 1472), which Harvey has considered to be a luxuriant garden state of *C. Septas*, is much nearer and may be a variety of this, but has, according to the plate, usually 6-merous flowers, and smaller leaves, more cuneate at the base. Judging from dried specimens, Drege's *Septas capensis* L. a. is *C. Saxifraga*. The brilliant red colouring of the under-surface of the leaf is not a constant character.

DESCR. Whole plant quite glabrous. Root tuberous, as large as a hazel nut, or even walnut. Stem two to four inches high,
NOVEMBER 1ST, 1873.



inclined or erect, as thick as a goose-quill, cylindric, red. *Leaves* two to four pairs, two to three inches diameter, opposite, connate by their short broad petioles, very fleshy, flat, horizontal, slightly concave above, orbicular or subreniform, margin lobulate, the lobules crenulate, upper surface bright green with broad flabellate whitish nerves that are not impressed, under-surface blood-red, with very faint nerves. *Scape* terminal, four to six inches high, slender, strict, erect, with a few subulate scales, pale-pink. *Cyme* one to two inches in diameter, many-flowered, sub-3-chotomously divided; bracts and bracteoles minute, subulate, pedicels one-eighth to one-third of an inch long. *Flowers* one-fourth of an inch in diameter, very pale flesh-coloured. *Sepals* ovate-oblong, green, with a gland at the back below the tip of each. *Petals* of the same shape, but three times larger, subacute, spreading. *Anthers* globose, red-brown. *Hypogynous-scales* minute. *Carpels* ellipsoid, narrowed into straight short styles.—*J. D. H.*

Fig. 1, Margin of leaf; 2, flower; 3, the same, with the corolla removed; 4, carpels and hypogynous scales:—*all magnified.*

N. 2356.

(2356)

CRASSULA VERSICOLOR. CHANGEABLE
CRASSULA.

Class and Order.

PENTANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-phyllus. *Petala* 5 (nunc unguibus coalitis). *Squamæ* 5 nectariferæ ad basin germinis. *Capsulae*. 5.

Specific Character and Synonyms.

* *Frutescentes.*

CRASSULA *versicolor*; corollis tubulosis, foliis imbricatis lanceolatis concavis cartilagineo-ciliatis basi connato-vaginantibus, floribus umbellatis.

CRASSULA *versicolor*; erecta, ramosa, foliis oblongo-lanceolatis cartilagineo-denticulatis basi connato-vaginantibus, umbellis geminato-multifloris. *Bot. Reg.* 320.

CRASSULA *versicolor*. *Burchell Mss.*

DESCR. *Stem* shrubby, erect, branched. *Leaves* imbricate, lanceolate, hollowed especially towards the base, connate, sheathing, edged with minute cartilaginous ciliæ. *Flowers* in umbels at the extremities of the branches. *Calycine* leaflets subulate, one third shorter than the tube of the corolla. *Corolla* hypocrateriform, with a long tube, formed by the adherent, but separable claws of the petals: *limb* shorter by half than the tube, five cleft: segments somewhat recurved, bright red on the outside, and white within, except a red margin, which gradually extends nearly over the whole. The flowers are sweet-scented in the evening.

This species, on account of the tubular corolla, belongs to DE CANDOLLE's *genus* LAROCHEA adopted by PERSOON and



and HAWORTH, also by SCHULTES in the new edition of the Systema Vegetabilium. But as this tube is made simply by the adhesion of the claws of the petals, which are more or less separable in all, and in CRASSULA *jasminea* (*supra* 2178) with quite as long a tube, are not at all connected, except at the upper part, this circumstance seems hardly sufficient to found a genus upon. JUSSIEU refers all the tubular species of CRASSULA to COLYLEDON.

CRASSULA *versicolor* is a native of the Cape of Good Hope, whence it was introduced by Mr. BURCHELL on his return from his travels in that country, and is indeed a very valuable acquisition to our gardens, as it flowers freely, and requires only to be protected from frost and from damp. Flowers most of the summer. Communicated by Mr. JOSEPHN KNIGHT of the Exotic Nursery in the King's Road.

TAB. 7749.

DASYLIRION QUADRANGULATUM.

Native of Mexico.

Nat. Ord. LILIACEÆ.—Tribe DRACÆNEÆ.

Genus DASYLIRION, *Zucc. (Bent. & Hook. f. Gen. Plant. vol. iii. p. 780.)*

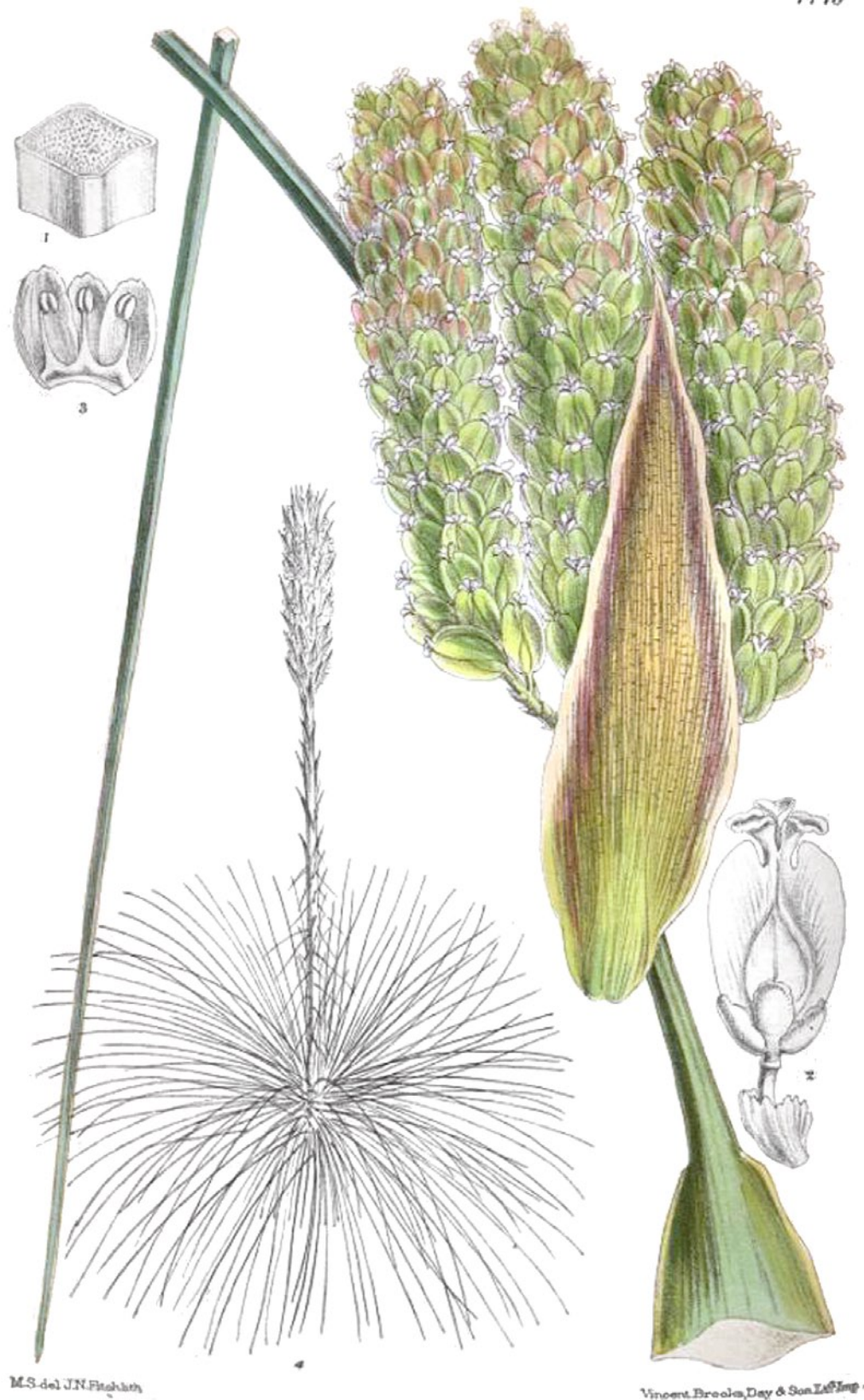
DASYLIRION quadrangulatum; caudice robusto, foliis numerosissimis densissime confertis 2-pedalibus exterioribus recurvis interioribus erectis rigidis tetragonis e basi dilatata ad medium compressis deinde æquilatis in apicem pungentem sensim attenuatis tactu asperulis marginibus subscaberulis, scapo 5-pedali robusto foliis setaceis elongatis inferioribus longioribus deflexis superioribus brevibus erectis ornato, inflorescentia paniculata e racemis confertis cylindraceis amentiformibus erectis bracteis immixtis constante, bracteis 6–8 poll. longis spathaceis ovato-lanceolatis acuminatis pallide brunneis albo-marginatis deciduis, racemis 4 poll. longis 1 poll. diam. breviter pedunculatis apice rotundatis, floribus densissime confertis imbricatis, pedicellis vix $\frac{1}{2}$ poll. longis supra medium articulatis basi bracteolatis, bracteolis pedicellis brevioribus cupuliformibus hyalinis erosis, perianthii segmentis late oblongis apice rotundatis, ovario compresso, stigmatibus reniformibus stipitatis, fructu $\frac{1}{5}$ poll. longo orbiculari-oblongo trigono valde compresso coriaceo indehiscente basi perianthio induto apice rotundato bilobo stigmatibus sinu insertis, alis amplis, nuce parvo 1-spermo, semine $\frac{1}{8}$ poll. longo ovoideo compresso-trigono, testa pallida coriacea nucleo adhærente.

D. quadrangulatum, S. Wats. in *Proc. Amer. Acad.* vol. xiv. (1879) p. 250. *Gard. Chron.* 1900, vol. i. p. 244.

Agave striata, var. *recurva*, Zuccarini, ex Baker in *Gard. Chron.* 1877, vol. ii p. 556.

This very remarkable plant is a native of the mountains of the Tamaulipas State of Mexico, at elevations of seven thousand to nine thousand feet, where it was collected by Dr. E. Palmer. It was first described in 1879 by Sereno Watson. But it must have been discovered and seeds sent to Europe before that time, for it was in cultivation in the Royal Gardens, Kew, in 1877, in which year Mr. Baker mentions it in the *Gardener's Chronicle*, under the name of *Agave striata*, var. *recurva*, of Zuccarini. In its native country the trunk is described as three feet to eight feet in height, and the flowering stalk five feet to ten feet; but the latter attains much larger dimensions in Europe, for Mr. Watson mentions a specimen growing in the Jardin d'Acclimatation of Hyères (under the name of *Xanthorrhæa hastilis*), with a scape and panicle together

DECEMBER 1ST, 1900.



M.S. del J.N. Fitch

Vincent Brooks, Day & Son, Lith

eighteen feet high, and another also of great size, but not in flower, at the Casino of Monte Carlo, named *D. juncifolium*. The latter specimen was subsequently seen by Mr. Baker in a flowering state, with leaves three feet to six feet long, and scapes fifteen feet to twenty feet high.

The origin of the specimen so long cultivated in the Succulent House of the Royal Gardens, Kew, is unknown. It is a female plant, of very slow growth, the stem being only eighteen inches high; the tuft of leaves is six feet in diameter, the scape eight feet high, and inflorescence two feet.

Descr.—*Trunk* stout, cylindric. *Leaves* (in the Kew specimen) two feet long, exceedingly numerous, densely crowded in a globose head, the outer recurved, inner erect, rigid, tetragonous, flattened from the base to about the middle, narrowed, and equilateral from thence to the pungent tip, surfaces rough to the touch, margins rather rough. *Scape* very stout, clothed with short leaves, the lower of which are deflexed, the upper erect. *Panicle* of numerous, strict, erect racemes of imbricating small green flowers mixed with large white, spathaceous, deciduous bracts, six to eight inches long. *Racemes* about four inches long, shortly peduncled; pedicels about half an inch long, jointed above the middle; bracteoles minute, cup-shaped, membranous, erose. *Segments of perianth* broadly oblong, obtuse. *Ovary* compressed, crowned with three reniform stigmas. *Fruit* orbicular-oblong, trigonous, compressed, about one-third of an inch long, winged all round, tip notched with the stigmas in the sinus, one-seeded. *Seed* minute, ovoid, trigonous.—*J. D. H.*

Fig. 1, transverse section of leaf 2, flowers and bracteole; 3, portion of perianth with stamens:—*all enlarged*; 4, *reduced* view of plant.

DASYLIRIUM ACROTRICHUM.

Bearded-leaved Dasylirium.

Nat. Ord. ASPARAGINEÆ.—DİCECIA HEXANDRIA.

Gen. Char. Flores dioici. MASC. *Perigonium* corollaceum, profunde 6-partitum; *foliolis* oblongis, uninerviis, navicularibus, campanulato-conniventibus (patentibus, *Brongn.*); exterioribus paulo longioribus vel brevioribus; præfloratio imbricata. *Stamina* sex, basi foliolorum inserta, plerumque iis breviora. *Filamenta* filiformia. *Antheræ* biloculares, oblonge, utrinque bilobæ, dorso medio affixæ, introrsa. *Pistillum* rudimentarium. FL. FÆM. *Perigonium* maris. *Stamina* antheris effetis; *ovarium* liberum, triquetrum, angulis membranaceis, uniloculare; *ovula* 6, per paria approximata, fundo ovarii affixa, erecta, anatropa. *Columna stylina* brevis, in *stigma* infundibulare margine undulato-plicatum irregulariter lobatum dilatata (*stigma* trilobum; lobis brevibus, ovatis, divergentibus, *Brongn.*). *Fructus* nucumentaceus, abortu monospermus (*akenium*, *Brongn.*), ovato-trigonus, angulis in membranam latam expansis. *Semen* immaturum erectum, fusiforme, utrinque acutum. *Caulis* lignosus, abbreviatus, foliosus, vel elongatus, caudiciformis, apice foliosus, erectus.—*Folia e basi semiaplexicauli linearia, superne subulato-angustata, apice marcido sæpe (semper, Brongn.) in fila dissolubilia, canaliculata, striata, rigida, margine nunc spinosa, inter spinas denticulato-spinulosa, nunc scabra.* Paniculæ terminales, solitariae, erectæ, simplices vel ramosæ, bracteatae. Flores parvi, albi, pedicellati, solitarii vel per 2–4 fasciculato-congesti, in ramulis spicati vel racemosi; pedicellis basi bracteolatis, superne articulatis. *Antheræ* flavæ.

DASYLIRIUM *acrotrichum*; caulescens, trunco elongato, foliis longissimis e lata basi lineari-subulatis viridibus fasciculo fibrarum emarcidarum terminatis planiusculis striatis rigide serrulatis spinosisque, spinis subulatis sursum curvatis, spica longissima cylindraceo-acuminata composita, spiculis (plant. fœm.) seu racemis cylindricis copiosis dense compactis erectis multifloris, bracteis amplis subæquilongis ovatis acuminatissimis, floribus (fœm.) dense imbricatis.

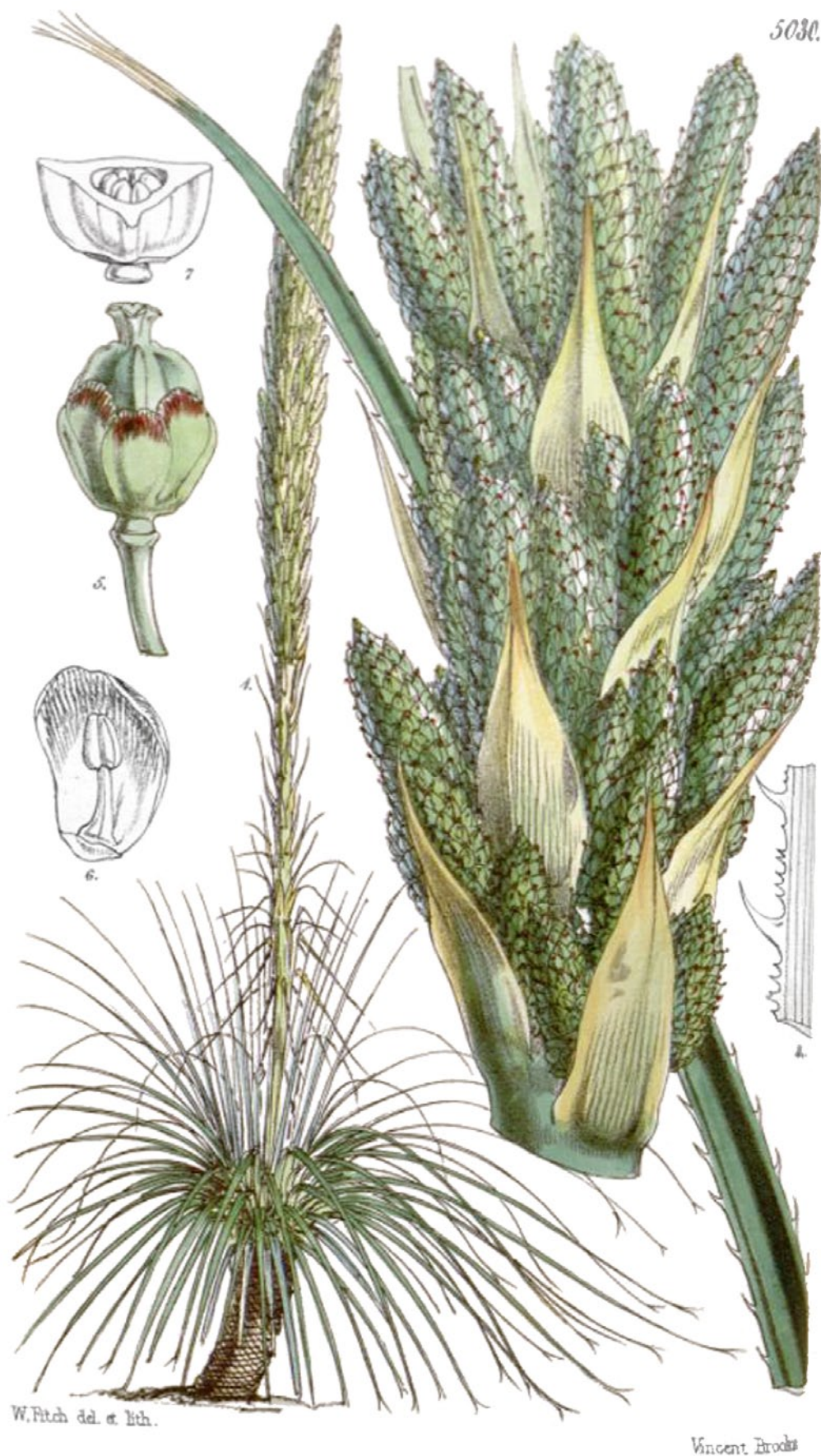
DASYLIRIUM *acrotrichum*. Zuccar. in Otto et Dietr. Allgem. Gartenz. 1838, n. 33. p. 259. Kunth, Enum. Pl. v. 5. p. 40.

YUCCA *acrotricha*. Schiede in Linnea, v. 4. p. 230, et v. 6. p. 52. Schultes, Syst. Plant. v. 7. p. 1716.

ROULINIA *acrotricha*. Brongn. in Ann. des Sc. Nat. v. 14. p. 320.

DASYLIRION *gracile*. Hort. Berol. 1847.

Of late years the greenhouses of botanic gardens have exhibited noble specimens of a very singular set of plants, with
FEBRUARY 1ST, 1858.



much of the habits of very narrow-leaved *Yuccas*, the foliage generally terminated with a pencil or brush of loose parallel rather rigid fibres, now and then sending up a solitary central stem of very small Asparagineous dioecious flowers, of which Zuccarini, in 1842, constituted a genus, to which he gave the not very appropriate name of *Daylirium* (thick or succulent Lily). Some well-grown species adorn the south end of the long succulent-house of the Royal Gardens; and, probably on account of the unusually warm and sunny summer, two of the species threw up their noble flower-stalks, the present one so tall, that the flowering portion soon came in contact with the loftiest part of this house, and it had to be removed into a taller one to perfect its flowering. The genus being (it is stated) always dioecious, we have in the present instance only the female plant. All the kinds (and six are described, though imperfectly so in most cases) are considered to be natives of Mexico, and in their native mountains must form, along with *Cactuses*, a remarkable feature in the scenery. Our plants of this were received from Mr. Repper, of Real del Monte, through the kindness of the Company bearing that name.

DESCR. *Stem* erect, or nearly so; in the individual under consideration about two feet high, and a foot at least or a foot and a half in girth, clothed with the broad, scale-like, withered bases of former years, and crowned by a graceful tuft of slender, pliable, but firm and coriaceous *leaves*, from three to four feet in length, the older and lower ones spreading and recurved, the younger and upper ones erect; all, from a broad base, rather suddenly linear-subulate, terminated by a harsh tuft or pencil of coarse fibres, nearly plane, that is, only slightly channelled on the upper surface, of an ordinary rather yellowish-green colour, finely striated on both sides, of a firm coriaceous texture, but with a graceful downward curvature of the old and lower leaves, the younger and terminal ones erect; the margins cartilaginous, white, and pellucid, cut into very fine sharp serratures, the teeth sometimes double, and beset with strong subulate spines, at distances of about half an inch, more or less, a line long, curved upwards, and of a pale-brown colour, the younger ones colourless. *Peduncle* terminal, solitary, at first rising up somewhat like a head of asparagus, but clothed with erect, imbricated, young leaves; then rapidly increases in size, and attains a height, including the flowers, of fifteen and sixteen feet, the lower part partially clothed with small leaves, which gradually pass upwards into subulate bracteas, and among the spikelets they are large, broad, membranaceous, ovate, sharply acuminate, brownish-green *bracts*, as long as or longer than the spikelets. *Spike* (female) three to four feet long, cylindrical, but slightly acuminate, loaded with the numerous, erect, bracteated *spikelets*, or more properly

racemes. *Pedicels* short, jointed a little below the flower, and there deciduous. *Perianth* of six, erect, imbricated, concave, broad-ovate *sepals*, of a greenish colour, streaked with red at the apex, each enclosing an abortive stamen, shorter than the sepal. *Ovary* (abortive) larger than the sepals, orbicular-oval, with three thick but wing-like angles, and crowned with a deeply three-parted *style*. *Stigmas* triangular. *Cell* solitary, with three erect ovules.

Fig. 1. Entire plant, much reduced in size. 2. Small portion of a female flower-spike, *nat. size*. 3. Apex of a leaf, *nat. size*. 4. Portion of a leaf, *nat. size*. 5. Female flower. 6. Sepal, including the abortive stamen. 7. Transverse section of an ovary:—fig. 5 and 7 *magnified*.

DICTYANTHUS PAVONII.

Pavon's Dictyanthus.

Nat. Ord. ASCLEPIADEÆ.—PENTANDRIA DIGYNIA.

Gen. Char. Calyx 5-partitus. Corolla speciosa, campanulata, 5-fida, laciniis ovatis obtusiusculis sursum reflexis eleganter reticulato-venosis, rete exili fuscescente. Corona staminea tubo adnata, corpusculis 5 sinibus oppositis spathulatis carnosulis subglandulosis reducta. Gynostegium parvum, tubo corollæ amplo inclusum. Antheræ membrana terminatæ, transversim et oblique dehiscentes, parvæ. Masse pollinis clavate, subcompressæ, apice pellucido. Stigma carnosum, pentagonum, angulis prominentibus.—Suffrutex volubilis Peruvianus; folia cordata, membranacea, longe petiolata; pedunculi petiolo breviores, 1–2-flori; corollæ speciosæ, bipollicares, reticulato-venosæ, Huerniam campanulatam mentiente Dene.

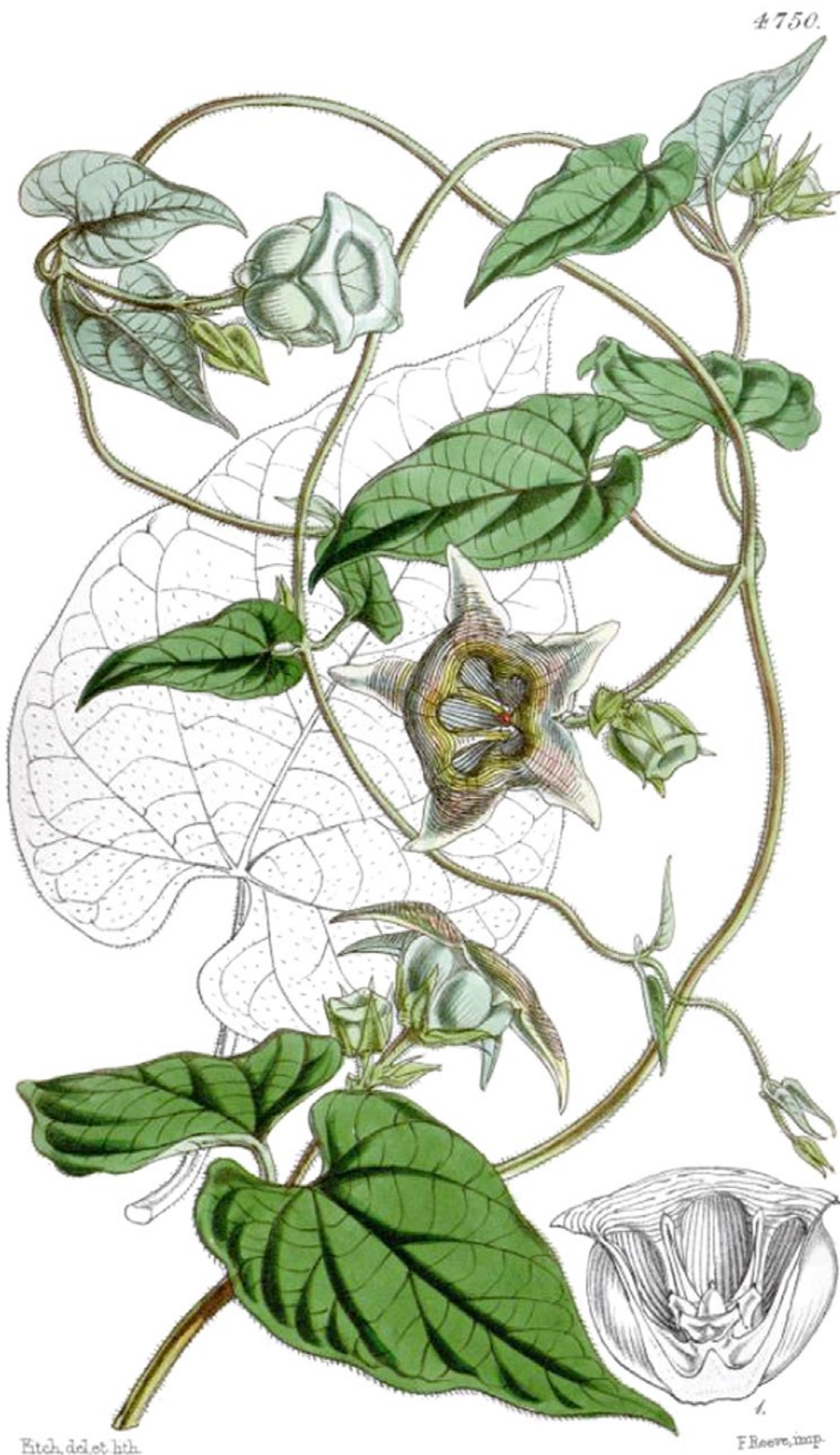
DICTYANTHUS Pavonii.

DICTYANTHUS Pavonii. Decaisne, in *De cand. Prodr.* v. 8, p. 605.

This is one among the remarkable forms of Asclepiadeous plants, a native of New Spain, where it was first detected by Pavon (whose name it bears). It has the habit of *Gonolobus*, or some other *climbing* member of the family, with flowers so much resembling a *Stapelia*, or rather a *Huernia*, that it is said to bear the name of *Stapelia campanulata* in Pavon's MSS. We received our plants from Messrs. Henderson, of St. John's Wood Nursery, and also from Messrs. Rollisons, of Tooting. It requires the heat of the stove, and flowers copiously in September.

DESCR. *Stems* climbing, long, branching, filiform, terete, slightly downy (as is the whole plant, except the flowers), tinged with purple. *Leaves* opposite, on moderately long, slender *petioles*, cordate or cordato-ovate, acuminate, membranaceous, entire, veined and reticulated, having a deep and obtuse sinus at the base. *Peduncles* axillary, solitary, longer than the petioles, but shorter than the leaves, generally three-flowered. *Calyx* cut to the base into five, erecto-patent, lanceolate segments, with their margins reflexed. *Corolla* large, rotate, with the tube large, thick

NOVEMBER 1ST, 1853.



and fleshy, semiglobose, pale green, longitudinally striated and having five furrows, so that between the furrows the outer surface is very convex, corresponding with five depressions or cavities, within, which are more distinctly striated with longitudinal fine brown lines than the external surface: the *limb* is broad, cut half-way down into five spreading ovate *lobes*, whose margins are recurved: the whole disc is pale green, beautifully striated concentrically, with fine brown lines which meet and hence become reticulated. The *staminal crown* is adnate with the tube and has five spreading lobes or horns. *Gynostegium* small, conical.



Fig. 1. Vertical section of the tube, showing the cavities within and the staminal crown in the centre:—magnified.





TAB. 6203.

DECABELONE BARKLYI.

Native of Little Namaqualand, S. Africa.

Nat. Ord. ASCLEPIADACEÆ.-Tribe STAPELIEÆ.

Genus DECABELONE, Dcne. (*Benth. et Hook. f., Gen. Plant*, vol. ii., p. 784, *ined.*; *Bot. Mag.*, 6115).

DECABELONE *Barklyi*; caulibus ramisque crasso-carnosis cactiformibus angulato-costatis, costis sæpiissime ad 12 spinosis, spinis tenuibus erectis setis lateralibus duabus deflexis armatis, corona staminea duplici. exteriori tubo stamineo affixa in lobos 10 filiformes apice globuliferos subæquales divisa, interiore squamis apicem versus attenuatis antheris adfixis squamulis brevibus bifidis interpositis.

DECABELONE *Barklyi*, Dyer, MSS.

Under Tab. 6115 it was mentioned that the Royal Gardens, Kew, possessed specimens both living and in spirit, as well as drawings and analyses, from H. E. Sir Henry Barkly, Dr. Shaw, and Mrs. Barber, of a second species of *Decabelone* from Little Namaqualand. As was stated there it is closely allied to *D. elegans*, the flowers being extremely similar, but the branches have nearly twice the number of angles; and the two lateral setæ of the spines are more slender and deflexed instead of erect.

The first discovery of this interesting plant is due to H. E. Sir H. Barkly, who sent a sketch of the plant in January, 1874, having found it three years previously growing in the Karoo, near the Orange River. Shortly after Dr. Shaw, who, as well as M'Lea, had found it in the same locality, sent to Kew specimens in spirit, and a careful analysis. Not having seen the description of *Decabelone*, Dr. Shaw rightly recognised the generic distinctness of the plant from other *Stapelieæ*, and proposed that it should constitute a new genus, to be named in honour of the Governor of the Cape. I have endeavoured, as far as the specific name will allow, to give effect to Dr. Shaw's wishes.

The present plate is partly founded upon a fine drawing for which Kew is indebted to Mrs. Barber, partly upon specimen
DECEMBER 1ST, 1875.

mens which flowered at Kew during the past year, and which were sent by Sir H. Barkly.

DESCR. *Stems* succulent, leafless, cæspitose, three to six inches high, with ten to twelve strongly marked angles furnished with processes each bearing one erect and two lateral deflexed slender white spines. *Flowers* borne as in *D. elegans*, occasionally two on a common peduncle, suberect; pedicels one-third to one-half inch. *Calyx* 5-lobed, lobes quarter of an inch long, linear-deltoid. *Corolla* two to three inches long, narrowly campanulate, tube slightly curved, marked much as in *D. elegans*; lobes deltoid, very acute, with occasionally an intermediate tooth. *Staminal-crown* double; exterior of ten similar segments connate at the base and slightly united in pairs, tapering into filiform, capitate, dark violet processes; interior of ten dissimilar processes, five slender and adnate to the anthers, upon which they are incumbent as in *D. elegans*, five alternating with these and one-third as long, broadly deltoid, and bifid. *Anthers* as in *D. elegans*.—*W. T. T. D.*

Fig. 1, Section through exterior staminal-crown, showing andrœcium viewed from above (*magnified*); 2, portion of staminal-crown viewed from within, on the right of the figure the place of attachment is shown of two anthers which have been removed, on the left an anther the form of which has been accidentally distorted by the lithographer; 3, pair of pollen-masses viewed from above (*magnified*).

TAB. 6115.

DECABELONE ELEGANS.

Native of Angola.

Nat. Ord. ASCLEPIADACEÆ.—Tribe STAPELIÆ.

GEN. CHAR.—*Calyx* brevis, 5-partitus, foliolis acuminatis, glandulis herbaceis acutis interdum introrsum interpositis. *Corolla* anguste campanulata, lurida; tubo externe striis maculisque brunneo-purpureis consperso, interne pilis papillæformibus deflexis instructo; limbo 5-fido, laciniis acutis, deltoideis, paullo revolutis. *Gynostegium* imo tubo conditum. *Coronæ stamineæ* lacinia 5, submonadelphæ, alte bifidæ, in fila gracillima apice capitato-incrassatæ attenuatæ. *Antheræ* ovatæ, obtusæ, dorso appendice ligulata incumbente; massæ pollinis horizontales, compressæ, subreniformes, funiculo appendice membranacea lineari munito. *Stigma* muticum, disciforme.—Herbæ stapeliiformes Africæ australis præcipuè tropicæ incolæ.

DECABELONE *elegans*; caulibus ramisque stapeliæformibus angulato-costatis, costis sæpissime 6 spinosis, spinis setis lateralibus duabus erectis armatis, floribus vel e ramulorum axillis vel ad fundum inter costas ortis, coronæ stamineæ laciniiis basi connatis albis, sursum in fila bina capitata atrovioacea gracillima attenuatis.

DECABELONE *elegans*, *Dcne. in Ann. Sc. Nat.* 5^e sér. t. xiii. p. 404, pl 2.

During the month of June of the present year this extremely interesting plant flowered for the first time in England, in the collection of J. T. Peacock, Esq., of Sudbury House, Hammersmith. A few weeks later flowers were also produced by plants in the Royal Gardens, Kew. The plate has been drawn from Mr. Peacock's specimen, a compliment which is no more than is due to the zeal and enterprise which he has shown in the cultivation of succulent plants. His plant has been grafted on a *Stapelia*, probably *S. Plantii*. It was obtained from Herr Pfersdorf, under the name of *Decabelone Sieberi*, but it appears to be identical with the plant described and figured by Decaisne, which was also obtained from the same cultivator, though the precise native origin was unknown.

The Kew plants were obtained direct from Angola, through the aid of Mr. Monteiro, to whom botanical science is under many obligations in elucidating the still little known Flora of that country, and was found by him at Ambriz, about three miles from the sea, in sand, near a salt marsh or "flat."

AUGUST 1ST, 1874.



The Kew Herbarium contains a specimen collected twenty years ago, at Loanda, by Dr. Welwitsch, who appears to have been disposed to constitute it a new genus, but subsequently referred it to *Huernia*. He notes that in habit it is "late cæspitosa."

The Royal Gardens, Kew, is also the fortunate possessor of specimens, both living and in spirit, as well as of drawings and analyses from His Excellency Sir Henry Barkly, Dr. Shaw, and Mrs. Barber of a second species, from Little Namaqualand. It is closely allied to *D. elegans*, the flowers being extremely similar, but the branches appear to have more numerous angles, and the two lateral setæ of the spines are more slender, and deflexed instead of erect. I am indebted to Professor Thiselton Dyer for the accompanying revised description of the genus and of this species.

DESCR. *Stems* succulent, leafless, cæspitose, four to six inches high, strongly angled, the angles furnished with patent spinous processes, each bearing two lateral erect barb-like setæ. *Flowers* produced according to Decaisne from the axils of the branchlets, but apparently also from the branches themselves between the spinous angles. *Flowers* sub-erect (the pendent habit given in the plate is due to the plant having been grafted); pedicels one-third of an inch, accompanied by one or two membranous acute bracteoles. *Calyx* 5-lobed, lobes one third to half an inch long, linear-deltoid, acuminate with a small linear herbaceous appendage arising between each pair of lobes on the inner side. *Corolla* narrowly campanulate, 5-lobed, tube externally marked with brownish-purple streaks and spots on a lurid yellow ground, internally furnished with numerous papilla-like deflexed processes and hairs; lobes deltoid, acute, slightly revolute. *Staminal-crown* 5-fid; segments connate at the base, oblong, white, deeply bifid, each tapering into two filiform capitate dark violet processes, becoming ultimately flaccid and entangled. *Anthers* broadly ovate, obtuse, with a dorsal incumbent ligulate appendage; pollen-masses horizontal, compressed, obovato-ensiform with a short funiculus furnished with a linear membranous appendage at the base, where it is attached to the stigmatic gland. *Stigma* disk-like.

Fig. 1, Spinous process from branch viewed from above (*magnified*); 2, longitudinal section through corolla (*nat. size*); 3, longitudinal section through gynostegium—the posterior pair of pollen-masses is represented displaced (*magnified*); 4, andræcium viewed from above (*magnified*); 5, pair of pollen-masses (*magnified*).

ECHEVERIA CANALICULATA.

Channelled-leaved Echeveria.

Nat. Ord. CRASSULACEÆ.—DECANDRIA PENTAGYNIA.

Gen. Char. Calyx quinquepartitus; laciniis foliiformibus, erectis. *Corolla* perigyna, quinquepartita; laciniis erectis, crassis, rigidulis, nervo medio incrassato, basi subtrigonis acutis. *Stamina* 10, imæ corolla inserta, inclusa. *Squamæ hypogynæ* breves, obtusæ. *Ovaria* 5, libera, unilocularia; *ovulis* ad suturam ventralem plurimis. Capsule folliculares, 5, in stylis subulatos attenuatæ, liberæ, intus longitudinaliter dehiscentes, polyspermae.—Frutices Mexicani, *carnosi*; foliis *alternis*, *caulinis* v. *rosulatis suboppositis, integerrimis, enerviis*; floribus *secus rachin* v. *secus cymæ ramos sessilibus, coccineis* v. *flavis*. Endl.

ECHEVERIA *canaliculata*; caule erecto crasso brevi, foliis rosulatis oblongis acuminatis crassis carnosus glauco-rufescentibus superne canaliculatis, ramorum elongatorum floriferorum foliis remotis minoribus angustioribus basi gibbosis, racemis elongatis bracteatis, sepalis lineari-lanceolatis patenti-recurvis, corollæ tubo brevissimo dilatato laciniis lineari-lanceolatis erectis apicibus subpatentibus.

Among the Crassulaceous plants the species of *Echeveria*, though straggling in habit when flowering, are eminently worth cultivating in our greenhouses. The flowers are often bright-coloured, and the leaves are very varied in form, thick and fleshy, more or less glaucous, and more or less tinged with red or purple. The present is not one of the least interesting, and makes a good appearance among its allies in the month of April in the succulent-house of the Royal Gardens of Kew. Plants of it were received from Mr. Staines from the Real del Monte mountains of Mexico, many years ago. I do not find any described species to correspond with it. Its nearest affinity is probably the *E. Scherii* of Dr. Lindley (Bot. Reg. vol. xxxi. t. 27); but the rosulate leaves are widely different in the two, broadly spatulate in the latter, oblong and tapering and deeply channelled in our present species.

DESCR. *Stem* short, thick, between fleshy and woody, erect, marked with the scars of fallen leaves. When not in a flowering state, all the leaves are rosulate, crowded, patent, four to six inches long, oblong or somewhat strap-shaped, thick, fleshy, tapering

JUNE 1ST, 1857.



gradually upwards into a very slender almost filiform point, deeply channelled above, semiterete beneath, glaucous but much tinged with purple. *Flowering stem* or *branch* elongated, one and a half to two feet high, its lower leaves the same as the rosulate ones, the rest are placed far apart (yet numerous), of the same shape, but smaller than the rest, with a gibbosity or blunt spur at the base beneath (not dilated like the rosulate ones), gradually passing upwards into small, very glaucous, oblong-obtuse *bracteas*. *Raceme* a span or more long. *Pedicels* half an inch or more long, with a few minute subulate *bracteoles*. *Calyx* of five, equal, linear-lanceolate, patenti-deflexed, glaucous *sepals*, much resembling the bracteas. *Corolla* nearly an inch long, rather bright brick-red, orange within. *Sepals* five, erect, close-placed, united at the base into a short dilated five-angled tube, the segments linear-lanceolate, the apices moderately spreading. *Stamens* quite included, five inserted at the base of the corolla, five smaller ones a little higher up. *Anther* oblong. *Ovaries* five, narrow, oblong, subcoadunate: at the base of each is a conspicuous, suborbicular *gland*, with a depression on the upper side. *Styles* slightly twisted. *Stigma* globose.

Fig. 1. Petal and three stamens. 2. Pistils and hypogynous glands:—*magnified*.



(3570)

ECHEVERIA RACEMOSA. RACEMED ECHE-
VERIA.

Class and Order.

DECANDRIA PENTAGYNIA.

(Nat. Ord.—CRASSLACEÆ.)

Generic Character.

Calyx 5-partitus, sepalis folia referentibus erectis ima basi subconcretis. *Petala* 5, inferne coalita erecta crassa rigidula ad nervum medium crassiora et fere basi trigona acuta. *Stamina* 10 petalis breviora basi cum petalis concreta. *Squamæ* 5 breves obtusæ. *Carpella* 5 in stylos subulatos abeuntia.—Frutices *carnosi Mexicani*. Folia *alterna caulina aut rosulata subopposita integerrima enervia*. Flores *secus rachin at secus cymæ ramos sessiles, coccinei aut flavi*. D C.

Specific Character and Synonym.

ECHEVERIA * *racemosa*; foliis rosulatis densis linguæformi-lanceolatis acutiusculis cartilagineo-marginatis, supra convexiusculis subtus convexo-carinatis, caule sparsim folioso simplici vel ramoso racemoso, laciniis calycinis æqualibus acutissimis patenti-reflexis.

ECHEVERIA racemosa. Hort. Claremont.

Four species of this handsome Genus are described by DE CANDOLLE, all natives of Mexico or California, and a fifth (Mexican one) is described by HAWORTH: from all these our plant differs in the inflorescence, and still more in the

So named by M. DE CANDOLLE in honor of ECHEVERA, a Mexican botanical painter.

the foliage. The Glasgow Garden has received it from the Berlin Garden, but without a name, and from that of Claremont under the appellation here adopted. Of its history, I regret to say I know nothing: it is probably a native of Mexico. The flowers are produced copiously in the greenhouse, in the summer and autumn months.

DESCR. Succulent, suffruticose. *Barren stems* short, thickly clothed with rosulate tufts of fleshy leaves, of a brownish-green colour and glaucous hue, two to four inches long, in form between lanceolate and linguiform, slightly concave above, convex and keeled beneath, the margin white and cartilaginous: *flowering stems* nearly a foot high, rounded, glaucous, sparingly leafy, with leaves of the same shape as those of the barren stems, but narrower and gradually becoming smaller. *Raceme* elongated, many-flowered. *Pedicels* curved. *Calyx* 5-partite, fleshy, glaucous, the segments ovato-lanceolate, very sharp-pointed. *Corolla* red, of five, erect, carinated *petals*, gibbous at the base, and there united so as to appear monopetalous. *Stamens* ten, five at the base of the petals, and alternate with them, five shorter ones inserted a little above the middle of the petals. *Hypogynous glands* five, small, white, fleshy, one at the base of each germen. *Pistils* five, standing close, erect: *Germen* ovate, tapering into a rather short, slender *style*: *Stigma* obtuse.

Fig. 1. Flower, with the Corolla laid open. 2. Single Pistil, with the Gland at the base:—*magnified*.

TAB. 8748.

ECHEVERIA SETOSA.

Mexico.

CRASSULACEAE.

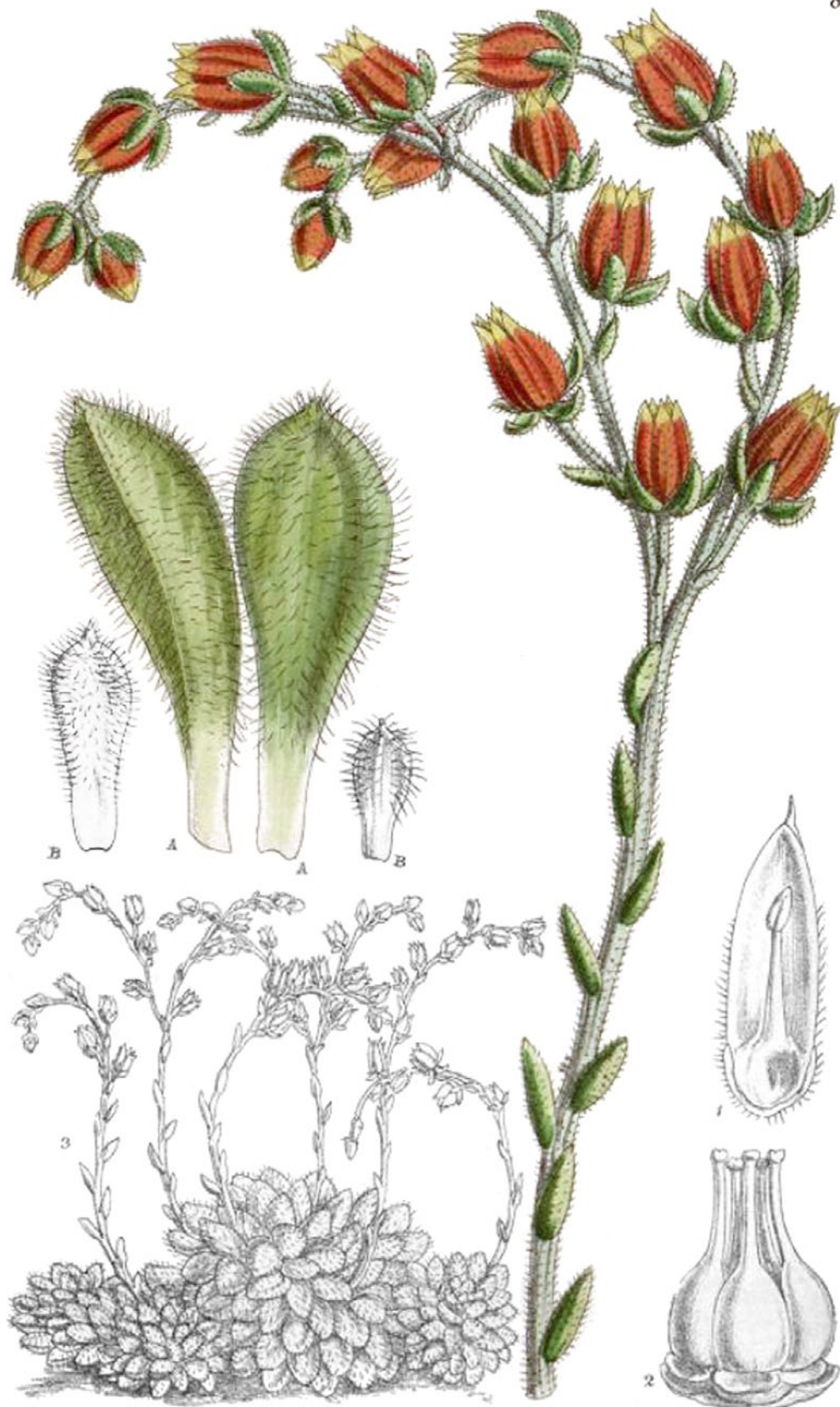
ECHEVERIA, DC.; *Rose in N. Amer. Fl.* vol. xxii. p. 13; *Benth. et Hook. f. Gen. Plant.* vol. i. p. 659, sub *Cotyledon*. Linn.

Echeveria setosa, *Rose et Purpus in Contrib. U.S. Nat. Herb.* vol. xiii. p. 45; *Rose in Addisonia*, i. 11, cum icon.; a speciebus coteris foliis et inflorescentiis albo-setosis differt.

Herba succulenta, acaulescens. *Folia* usque ad 100 vel ultra, in rosulam densam 7–10 cm. diametro, 4–7 cm. altam collecta, sessilis, supra fere plana, subtus convexa, oblanceolato-spathulata. ad 5 cm. longa, 1.8 cm. lata, 5 mm. crassa, mucronato-cuspidata, viridis, nitida, pilis patentibus utrinque albo-setosa. *Scapi* a foliorum superiorum axillis orti. 1–4 ex quaque rosula, 10–12 cm. longi, laxe foliati, foliis anguste oblongis. *Inflorescentiae* scorpioideae, simplices vel bifurcatae; bracteae inferiores 1–1.5 cm. longae. apice basique angustatae, utrinque convexae, superiores gradatim minores; pedicelli interiores 1–3 cm. longi. *Sepala* patula, lineari-oblonga, viridia, ad 10 mm. longae, 2–3 mm. lata. *Corolla* 10–16 mm. longa, basi rubra, apice flava, intus levis, extra leviter setosa fere ad basin in segmenta lineari-oblonga fissa. *Stamina* 10, inclusa, alba. *CarPELLA* 4–6 mm. longa, in stylum gradatim attenuata; stylus 4–5 mm. longus, viridis.—M. L. GREEN.

The genus *Echeveria* was proposed by Decandolle in 1828 for those species from America which earlier authors had referred to *Cotyledon*, originally founded by Linnaeus on African and Mediterranean plants. The new genus differed from *Cotyledon* mainly in having the petals connate only at the base and the stamens shorter than the petals. In 1865 Bentham and Hooker declined to accept these differential characters as adequate. In their view the only character by which *Echeveria* could be distinguished from *Cotyledon* is to be found in the pentagonal corolla. But floristic convenience at times finds monographic canons unduly severe, and its dictates have induced Dr. Rose to reconsider the verdict of the *Genera Plantarum*. In 1903 this careful student reverted to the view of Decandolle, and two years later definitely

JAN.—MARCH, 1918.



MS. del. J.N. Fitch lith

Vincent Brooks Day & Son Lith

L. Reeve & Co London.

resuscitated *Echeveria*, which as defined by him, includes some sixty species, mostly Mexican, though some occur in Central America, a few in South America, and one is met with in Texas. It has to be noted, however, that while he accepts the view of Decandolle in preference to that of Bentham and Hooker, the character on which Dr. Rose lays greatest stress is that pointed out in the Genera Plantarum; *Echeveria*, Rose, as contrasted with *Echeveria*, DC., must consequently be held to include several South African plants with a pentagonal corolla. This suggests consequences which need not be discussed in connection with *E. setosa*, the species now figured, which has, so far, only received a name in the genus *Echeveria*. This plant, readily distinguished from all its congeners by its setose leaves, was discovered in 1907 by Dr. C. A. Purpus on the Cerro de la Yerba, near San Luis Tultitlanapa, Puebla, South Mexico. Plants were presented to Kew in 1910 by Dr. Britton, New York Botanic Garden, and in 1912 another was acquired from Messrs. Haage and Schmidt, Erfurt. From the latter, which flowered in 1914, our figure has been prepared; two smaller leaves' have been added to the plate from a plant presented by Dr. Britton. In England *E. setosa* can only be grown under greenhouse conditions. It flowers regularly and produces offsets freely.

DESCRIPTION.—*Herb*, succulent, stemless. Leaves 100 or more, clustered in a dense rosette 3–4 in. across, and $1\frac{1}{2}$ –3 in high, sessile, almost flat above, convex beneath, oblanceolate-spathulate, up to 2 in. long, $\frac{3}{4}$ in. wide, $\frac{1}{2}$ in. thick, mucronate-cuspidate, green, polished, white-setose on both faces with spreading hairs. *Scapes* 4–5 in. long, 1–4 to each rosette, from the axils of the upper leaves, sparsely beset with narrow oblong leaves. *Inflorescence* scorpioid, simple or forked; lowermost bracts $\frac{2}{5}$ – $\frac{3}{5}$ in long, narrowed to the tip and to the base convex on both faces, gradually decreasing upwards; lower pedicels $\frac{2}{5}$ – $1\frac{1}{4}$ in. long. *Sepals* spreading, linear-oblong, green, up to $\frac{2}{5}$ in. long, $\frac{1}{12}$ – $\frac{1}{5}$ in. wide. *Corolla* $\frac{2}{5}$ – $\frac{2}{3}$ long, red towards the base, yellow above, smooth within, finely setose without, split almost to the base into 5 linear-oblong segments. *Stamens* 10, included, white. *Carpels* $\frac{1}{6}$ – $\frac{1}{5}$ in. long, gradually narrowed into green cylindric styles $\frac{1}{6}$ – $\frac{1}{5}$ in. long.

Tab. 8748.—Fig. 1, petal and stamen; 2, pistil; 8, sketch of an entire plant; A, A, leaves from the Erfurt plant figure; B, B, leaves from a plant received from New York:—all enlarged except 3, which is much reduced.



Pub. by Curtis & Macmillan, Edinburgh, 1836.

Scrub

(3673)

EUPHORBIA JACQUINIFLORA. JACQUINIA-
FLOWERED EUPHORBIA, OR SPURGE.

Class and Order.

MONÆCIA MONANDRIA.

(Nat. Ord.—EUPHORBIACEÆ.)

Generic Character.

Involucrum androgynum 4—5-fidum, extus appendiculis glandulosis (petala, *L. nectaria*, *aliorum*). Peripherici: pedicelli incerti numeri, singuli cum singulis staminibus articulati. *Germen* pedicellatum, centrale: *Styli* 3, 2-fidi. *Capsula* 3-cocca. *Spreng.*

Specific Character and Synonym.

EUPHORBIA *jacquiniflora*; dioica? fruticosa, foliis deflexis longe petiolatis lato-lanceolatis, racemis axillaribus paucifloris, involucri lobis 5 obcordatis coccineis basi glandulosis cum squamis rotundatis serratis luteis internis alternantibus.

I regret to know nothing more of the history of this very singular and handsome frutescent EUPHORBIA, than that it was sent from the Berlin Botanic Garden under the appropriate name here retained, and that it flowers in the stove of the Glasgow Garden during the winter months. The fine rich red of the spreading lobes of the involucre contrast admirably with the full and bright green of the foliage.

DESCR. Our plant is a shrub, four to five feet high, the stem slender, branching only above, and there only leafy. Leaves all pendent, broadly lanceolate, entire, acute, somewhat membranaceous, penninerved, upon long footstalks. From the axils of the upper leaves arise the short racemes of few flowers (or rather involucre,) each pedicel with a small ovate bractea at the base. Involucre with a short

short, broadly ovate, greenish tube, and a five-cleft, spreading bright red *limb*: the segments obcordate, and having at the mouth five roundish, bifid, serrated, buff-coloured, connivent scales. At the base of each lobe is a transverse honey-bearing gland. In our plant the involucre contains only *male flowers*; each consists of a pedicel with a single *stamen*, subtended by a narrow linear scale. *Anthers* of two globose cells, set apart at the apex of the filament.

Fig. 1. 2. Unexpanded Flowers. 2. Portion of the Involucre, the Scales removed to show the Gland. 3. Scale. 4. Male Flower and accompanying Scale or Bractea:—*magnified*.



TAB. 7000.
HUERNIA ASPERA.
Native of Zanzibar.

Nat. Ord. ASCLEPIADEÆ.-Tribe STAPELIEÆ.

Genus HUERNIA, Br.; (*Benth. et Hook. f. Gen. Pl. vol. ii. p. 784.*)

HUERNIA aspera; caulibus decumbentibus v. declinatis, ramis adscendentibus cylindraceis lævibus glaberrimis 5-6-sulcatis interspatiis convexis, foliis minutis remotis dentiformibus, cymis sessilibus 2-3-floris, bracteis subulatis, pedicellis corolla brevioribus, sepalis lineari-subulatis patentibus, corolla campanulata intus saturate purpurea, lobis brevibus deltoideis acuminatis, corone exterioris lobis 5 brevibus, interioris lobis subulatis antheris paullo longioribus.

H. aspera, N. E. Brown in *Gard. Chron.* 1887, vol. ii. p. 364.

This little plant is interesting as being a tropical African member of a genus that has hitherto been known to occur only in South Africa. About a dozen species are described, most of which were first published long ago as *Stapelias*, from which genus *Huernia* was separated by Brown on account of its campanulate corolla. In the early years of this century, when succulents were favourite objects of culture, about half-a-dozen kinds of *Huernia* were known, and of these five are figured in the early numbers of this Magazine. These are enumerated under *H. brevirostris*, N. E. Br. (tab. 6379), which, with *H. oculata*, N. E. Br., are more recent *additions. The above all closely resemble *Stapelia* in habit, and occur in the headquarters of the tribe, which is the western districts of South Africa. *H. aspera*, on the other hand, not only inhabits a very distant and far different latitude and climate from these, but differs from them greatly in habit, which resembles a good deal that of the North African and Sicilian representative of the *Stapelieæ*, the *Boucerosia Gussoniana* (*Apteranthes Gussoniana*, Tabl. 5087).

H. aspera was sent from Zanzibar by Sir John Kirk in 1886, and is no doubt a native of that island or of the opposite coast. The plant flowered in the Royal Gardens in September, 1887.

DESCR. *Stems* straggling, procumbent, purplish brown, JUNE 1ST, 1888.

with ascending divaricate green cylindric or fusiform branches, one and a half to four inches long; branches about half an inch in diameter, with five or six furrows, separated by rounded ridges. *Leaves* minute, tooth-like, distant, horizontal or recurved. *Flowers* few, in a sessile cyme; bracts subulate, and short pedicels dark purple. *Sepals* linear-subulate, greenish or purple, spreading. *Corolla* nearly one inch in diameter and as long, campanulate; lobes very short, broadly triangular, acute, sinus very shallow, with a central tooth, outer surface roughly papillose, pale purplish with broad dull veins; inner surface very dark purple, clothed with pointed papillæ. *Column* very short; outer corona of five broad short truncate very dark lobes; inner of five oblong-lanceolate yellowish erect incurved obtuse lobes, shortly produced beyond the anthers.—*J. D. H.*

Fig. 1, Base of column with sepals and corona; 2, column; 3, column with the five inner lobes of the corona removed; 4 and 5, pollinia:—*all enlarged.*



TAB. 6379.

HUERNIA BREVIROSTRIS.

Native of South Africa.

Nat. Ord. ASCLEPIADEÆ.—Tribe STAPELIEÆ.

Genus HUERNIA, *R. Br. (Benth. et Hook. f. Gen. Plant, vol. ii. p. 784.)*

HUERNIA brevirostris; humilis, cæspitosa, ramis crassis 4–5-angulatis, angulis acutis dentatis, floribus cymosis, cymis sessilibus ad mediam ramorum enatis, floribus 4–6, pedicellis glabris, lobis calycinis lanceolato-subulatis, corolla pallide sulphurea sanguineo-punctata, extus lævi intus minute papillata, tubo campanulato, limbo patentissimo diametro $1\frac{1}{4}$ poll., lobis deltoideis acuminatis, corona exterior 5-loba velutino-atra, lobis rectangulis emarginatis, coronæ interioris lobis apice in cornua brevissime productis.

H. brevirostris, *N. E. Brown in Gardeners' Chronicle*, n. s. vii. p. 780.

A very pretty species of the interesting genus *Huernia*, a genus which for some unaccountable reason has never been adopted by horticulturists, although it is one of the most distinct in the tribe *Stapelieæ*, and which may always be recognised by the corolla having a distinct tube and a more or less spreading limb, with the genitalia seated at the bottom of the tube, the outer corona being quite sessile and more or less adnate to the bottom of corolla. Five species of *Huernia* have now been figured in the "Botanical Magazine," viz., *H. lentiginosa* (t. 506), *H. clavigera* (erroneously figured at t. 1661 as *H. campanulata*, and at t. 2401 as *H. barbata*), *H. campanulata* (t. 1227), *H. Hystrix* (t. 5751), and the present species. Most of these have been figured under the generic name of *Stapelia*, with the name *Huernia* placed in the synonymy. *H. brevirostris* is not closely allied to any other described species, and is well distinguished from all known to me by its very thick stems, hairless corolla, and the very short apices of the lobes of the inner corona; like

AUGUST 1ST, 1878.

several of its congeners it is almost scentless. It was discovered by Mr. Bolus on the dry, rocky hills of Ryneveld's Pass, near Graaff Reinet, in South Africa, at an altitude of 2700 ft., where it is tolerably common, and flowers in April. Our drawing was made from a plant sent to Kew by Mr. Bolus, which flowered in August, 1875.

DESCR. Plant dwarf and cæspitose, glabrous. *Stems* two to three inches long, three-quarters to one inch thick, four- to five-angled; angles acute, acutely toothed. *Flowers* in four- to six-flowered sessile cymes, arising from about the middle or towards the base of the younger branches. *Pedicels* four to six lines long. *Calyx* five-parted; segments lanceolate-subulate acute, two to three lines long. *Carolla* one and a quarter inches in diameter, outside smooth, pale green, often tinged with purplish on the tube, the lobes darker, faintly spotted with minute purplish spots, and marked with three strong and two faint nerves or ribs; inside, the tube excepted, minutely papillate, the papillæ with a minute purple-red spot at the apex, some of those in the throat minutely bristle-pointed, otherwise quite glabrous, pale sulphur-yellow, covered with small blood-red spots; tube pinkish white, spotted with blood-red, the bottom entirely blood-red, smooth and shining; tube three lines deep, slightly constricted at the mouth, limb very spreading, the lobes deltoid acuminate recurving. *Outer corona* velvet-black, 5-lobed, lobes rectangular, emarginate. *Inner corona* of five lobes, purplish, spotted in the upper part with yellowish, their apices very shortly produced, not more than half a line long.—*N. E. Brown.*

Fig. 1, Corona seen from above; 2, corona, side view; 3, anther and lobe of inner corona, detached:—*all enlarged 7 diameters.*

TAB. 7905.

HUERNIA CONCINNA.

Native of Somaliland.

Nat. Ord. ASCLEPIADACEÆ.—Tribe STAPELEÆ.

Genus HUERNIA, B. Br.; (*Benth. & Hook.f. Gen. Plant.* vol. ii. p. 784.)

HUERNIA concinna; caulibus 1–2½ poll. longis caspitosis 5-gonis, spinis ad ¼ poll. longis subulatis, floribus solitariis binisve, pedicellis brevibus glabris, corolla late campanulata extus glabra alba intus ubique processibus subulatis conspersa pallide sulphurea punctis rubro-purpureis maculata, lobis ⅓ poll. longis deltoideis acuminatis purpureo-marginatis, sinibus latis fundo apiculatis, coronæ exterioris breviter 5-loba velutinæ purpureæ lobis transverse oblongis emarginatis, coronæ interioris lobis late ovatis conniventibus flavis purpureo punctatis et marginatis.

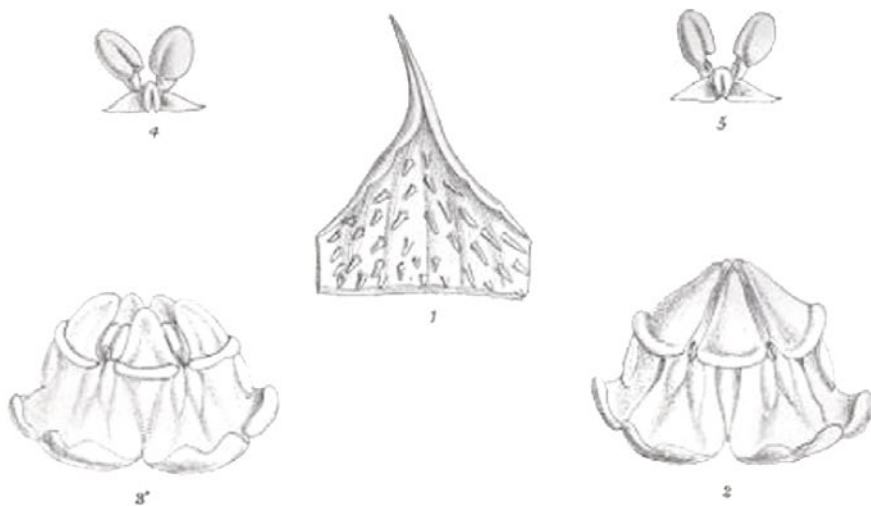
H. concinna, N.E. Br. in *Dyer, Fl. Trop. Afr.* vol. iv. p. 497.

H. macrocarpa, Taubert in *Gartenfl.* 1895, p. 353, t. 1416, non alior.

The genus *Huernia*, estimated in the “Genera Plantarum” in 1886 to contain eleven species, all South African, has been largely increased by recent discoveries in tropical Africa, whence eight additional species have been described by Mr. N. E. Brown in the very recently issued *Flora* of that region; and an Arabian congener, *H. arabica*, N. E. Br., has added Asia to the geographical range of the genus. *H. concinna* was, together with another new species (*H. Somalica*, N. E. Br.) brought from Somaliland by Mrs. Lort Phillips, and presented to the Cambridge Botanic Garden, where it flowered in the midsummer of 1900, and was described by Mr. N. E. Brown, whose description I have followed above. The individual specimen is that here figured, which was forwarded by Mr. Lynch to the Royal Gardens, Kew, in June, 1900.

DESCR.—*Stems* clustered, one to two and a half inches long, five-angled, spiny; spines about a quarter of an inch long, subulate. *Flowers* solitary or in pairs, on short, glabrous pedicels. *Sepals* a quarter of an inch long, gradually tapering from a broad base to fine hair-like points, glabrous. *Corolla* broadly campanulate, about one inch across, glabrous outside, smooth, yellowish white, covered everywhere inside with bristle-like appendages, pale yellow, dotted with purple-brown; lobes about one-

JULY 1ST, 1903.



third of an inch long, deltoid, acuminate, not fringed, alternating with as many teeth. *Outer corona* very shortly five-lobed; lobes transversely oblong, emarginate, velvety, purple-brown. *Inner coronal-lobes* broadly ovate, connivent in a cone over the tips of the anthers, yellow, edged and speckled with purple-brown.—*J. D. H.*

Fig. 1, portion of inner surface of corolla; 2, corona; 3, the same with the inner lobes removed; 4 and 5, pollinia:—*all enlarged.*

HUERNIA OCULATA.

Native of Dammara Land.

Nat. Ord. ASCLEPIADEÆ.—Tribe STAPELIEÆ.

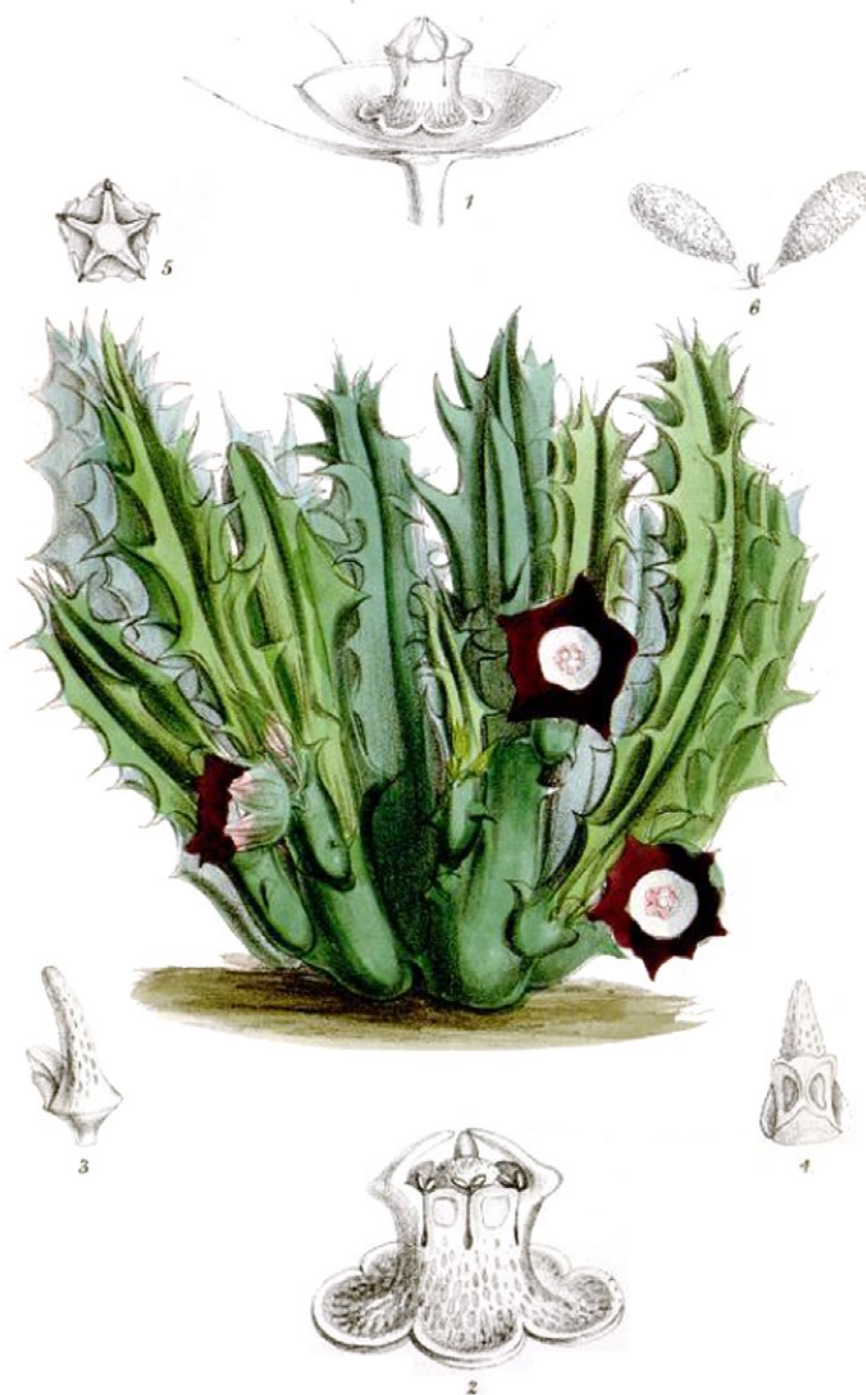
Genus HUERNIA, R. Br.; (*Benth. et Hook. f. Gen. Pl. vol. ii. p. 784.*)

HUERNIA oculata; humilis, cæspitosa, glaberrima, ramis erectis 5-angulatis, sinubus acutis, angulis compressis grosse molliter spinoso-dentatis, dentibus rectis v. curvis, floribus subcymosis breviter pedicellatis, pedicellis glabris, lobis calycinis subulato-lanceolatis, corollæ lævis lobis brevibus parvis triangularibus acutis sinubus 1-dentatis, limbo saturate purpureo, tubo albo, corona exteriora a basi columnæ explanato 5-loba, lobis horizontalibus rotundatis integerrimis, interiore e cornubus 5 dorso antherarum adnatis dein inflexis apicibus supra stigma cohærentibus.

The genus *Huernia*, of which only a dozen species are described, is no doubt a very large one in South Africa, extending from the Cape district far to the north, though its exact limits are unknown. The species resemble *Stapelias* in habit, but differ in the broadly campanulate or cupular corolla with very small lobes, and having a tooth in the sinus between them. *H. oculata* resembles no described species, and is remarkable for the striking contrast in colour between the deep violet-purple limb of the corolla and the white cup-shaped tube, the limits of the colours being so sharply defined that the flower has a staring look. It was procured with other very singular plants in Dammara Land, in 1880, by Capt. Een, when trading on that coast, and brought by him to Kew, where it flowered in June, 1880.

DESCR. Densely tufted, branching from the base, pale green, soft; branches three to four inches high by one-half to three-quarters of an inch broad, five-angled, quite smooth, sinus deep between the angles, acute at the base; angles compressed, produced into soft spine-like teeth one-third to half an inch long, that are broad at the base and straight or curved. *Flowers* in small lateral few-flowered

NOVEMBER LST, 1882.



cymes; pedicels short, glabrous. *Calyx* segments one-third of an inch long, subulate. *Corolla* nearly one inch in diameter, tube almost hemispherical, rounded at the base; limb short spreading, five-toothed, the teeth short triangular acute remote, with a minute intermediate tooth; the tube is white inside, the limb deep violet-purple, sharply defined in a circle against the white of the tube. *Column* short; outer corona adnate to the base of the column, spreading horizontally from it, five-lobed; lobes fleshy, rounded, quite entire, concave on the surface; inner corona of five large subulate fleshy papillose teeth inserted one at the back of each anther, inflected over the stigma and meeting at their points. *Anthers* truncate; pollen-masses pyriform, caudicle short; gland with two subulate auricles. *Stigma* discoid, five-angled.—*J. D. H.*

Fig. 1, Four sepals, portion of the base of the corolla and column; 2, column with outer and inner corona; 3, side, and 4, front view of anther and inner coronal appendage; 5, stigma and pollen-masses; 6, pollen-masses:—*all enlarged*.

TAB. 7730.

HUERNIA SOMALICA.

Native of Somaliland.

Nat. Ord. ASCLEPIADEÆ.—Tribe STAPELIEÆ.

Genus HUERNIA, Br.; (*Benth. & Hook. f. Gen. Plant.* vol. ii. p. 784.)

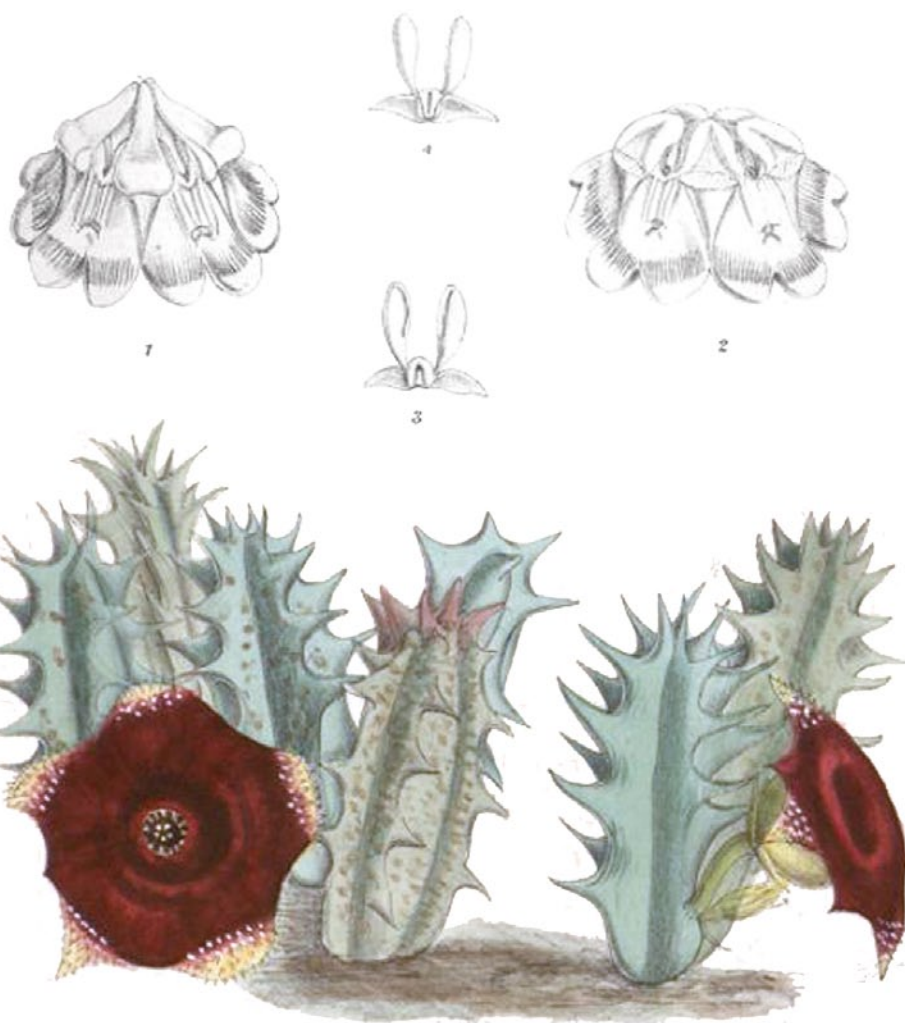
HUERNIA somalica; caulibus brevibus crassis pentgonis glabris pallide viridibus, angulis crassis grosse sinuato-dentatis, dentibus ad $\frac{1}{4}$ poll. longis deltoideo-subulatis lateraliter compressis apicibus spinescentibus, floribus basin versus ramorum erratis breviter crasse pedicellatis, sepalis subulatis $\frac{1}{4}$ -poll. longis, corolla tubo parvo subgloboso-campaulato glabro, limbo $1\frac{1}{2}$ –2 poll. diam. patenti-recurvo glabro fusco-psrpureo remote 5-lobato, lobis deltoideis acutis ochraceis papillis rubris ornatis sinibus latis medio dentiferis, coronæ exterioris lobis subquadratis bifidis glabris sanguineis interioris lobis late subulatis incurvis conniventibus luteis, antherarum loculis angustis pallidis, polliniis clavatis glandula bialata sessilibus.

H. somalica, *N.E. Br. in Kew Bulletin*, Nov., 1898, p. 309.

The genus *Huernia*, Br., consists of about sixteen species of South African and Tropical African plants, distinguished from *Stapelia* chiefly by the toothed sinus of the corolla and adnate outer corona. Nine of these, including *H. Somalica*, have been figured in this work, some of them under *Stapelia*. I am indebted to Mr. N. E. Brown for the following enumeration of them:—*H. venusta*, R. Br. (*St. lentiginosa*, Sims, t. 505). *H. campanulata*, R. Br. (*S. campanulata*, Mass. t. 1227). *H. clavigera*, Haw. (as *S. campanulata*, Mass. t. 1661, and *S. barbata*, Mass. t. 2401). *H. reticulata*, Haw. (*S. reticulata*, Mass. t. 1662). *H. Hystrix*, N. E. Br. (*S. Hystrix*, Hk. f. t. 5751), *H. brevirostris*, N. E. Br. (t. 6379); all from South Africa; and *H. oculata*, Hk. f. (t. 6658), and *H. aspera*, N. E. Br. (t. 7000), from Tropical Africa.

Huernia somalica was brought from Somaliland by Mrs. Lort Phillips, who presented living specimens, both to the Royal Gardens, Kew, and to the Gardens of the University of Cambridge, with the information that it was called “Anahrob” by her Somali boy. It flowered for the first time at Cambridge in July, 1897, and in the following year at Kew. The figure is of the Cambridge specimen.

AUGUST 1ST, 1900.



Descr.—*Stems* short, two to three inches high, about an inch in diameter, simple, sub-erect, five-angled, glabrous, pale green; angles deeply, regularly sinuate-toothed; teeth about a fourth of an inch long, subulate-deltoid, laterally compressed, green, pungent. *Flowers* from the lower part of the stem stoutly pedicelled, one and a half to two inches in diameter; pedicel sigmoidly curved, stout. *Sepals* subulate, about a fourth of an inch long. *Corolla-tube* small, globosely campanulate, glabrous; limb spreading and recurved, forming an annulus around the mouth of the tube, dark purple, glabrous, remotely five-lobed; lobes deltoid, spreading, acute, ochraceous, studded with purple papillæ; sinus with a minute tooth. *Corona* very small; outer lobes sub-quadrate, bifid, glabrous, blood-red; inner broadly subulate, incurved, with their tips connivent, golden-yellow, bases tumid. *Pollinia* narrowly clavate, seated on a two-winged gland.—*J. D. H.*

Fig. 1, staminal corona; 2, the same, with the inner lobes removed; 3 and 4, pollinia:—*All enlarged.*

MESEMBRYANTHEMUM ACINACIFORME.

Scimitar-leaved Fig-Marigold.

Nat. Ord. FICOIDEÆ.—ICOSANDRIA POLYGYNIA.

Gen. Char. (Vide supra, TAB. 2144.)

W. Pritch, del. et. lith.

Vincent Brooks, imp.

§ ACINACIFORMIA (Salm-Dyck). Caules fruticosi, validi, angulares, decumbentes. Folia connata, triquetra, acinaciformia, crassa, lævia. Flores speciosi, solitarii, rubicundi aut flavi. Calyx 5-partitus, lobis inæqualibus. Stigmata 6–10. Fructus carnosus.

MESEMBRYANTHEMUM acinaciforme; foliis compresso-triuetris sursum incrassatis acutis vel acutiusculis, carina marginibusque integris v. undulato-serrulatis, pedunculis bibracteatis petalis purpureis, stigmatibus ad 14.

MESEMBRYANTHEMUM acinaciforme. Linn. *Sp. Pl.* 695. Dill. *Hort. Elth.* f. 270-271. Andr. *Rep. t.* 508. De Cand. *Pl. Grasses*, t. 89. Salm-Dyck, *Monog.* § 19. t. 6.

M. lævigatum. Haw. *Syn.* 233.

M. rubrocinctum. E. et Z., *Bot. Reg.* 1732.

M. subalatum. Haw. *Syn.* 235.

Dr. Lindley, speaking of *Mesembryanthemum rubrocinctum* (Bot. Reg. 1732), which is a mere variety of this species, remarks, that it may perhaps be considered the finest of the extensive genus to which it belongs. Few things can be more effective than a well-disposed patch of this plant. It is an old inhabitant of gardens in the south-west of England, and well known in many out-of-the-way places, but by no means so generally as it deserves. It is with a view to draw attention to it and to its congeners, which have been too much neglected of late years, that we have had figured this species from a plant grown in the Scilly Islands, obligingly sent to us by A. Smith, Esq., M.P. It is a native of the Cape of Good Hope,—the headquarters of the Fig Marigolds,—growing, according to Dr.

OCTOBER 1ST, 1865.

Sonder ('Flora Capensis,' v. 2. p. 412, whence we have obtained the above synonymy), on the sandy flats near Cape Town, etc. *M. rubrocinctum* differs from our variety solely in the trivial character of a frequent red line along the leaf-margins. The fruit is said to be eatable.

DESCR. *Stem* two to four feet, procumbent, pointed, the young shoots compressed and angular. *Leaves* two to three inches long, about three-quarters of an inch in thickness a little above the middle, triquetrous, pointed, and more or less narrowed to the base, where the opposite leaves are shortly connate; the keel, and sometimes the upper edges of the leaf, are either serrulate or entire, with or without a red line. *Peduncle* two-edged, with a pair of connate *bracts*. *Stamens* four to five inches in diameter; *petals* purple, linear, emarginate. *Anthers* dark-purple. *Stigmas* twelve to fourteen, pale-yellow.

Fig. 1. Calyx and stigmas, after removal of the petals and stamens.

MESEMBRYANTHEMUM ALBIDUM. WHITE-
LEAVED FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa linearia, basi cohærentia. *Caps.* carnosa infera polysperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *albidum*; foliis subulatis triquetris per-
albis: basi semiteretibus; apice obtusis cum mucrone.
Haworth Mesembr. p. 156. *n.* 32.—*Misc. Nat.* 27.—
Pl. Succul. 218. *Hort. Kew. ed. alt.* 3. *p.* 216.

MESEMBRYANTHEMUM *albidum*; acaule, foliis triquetris inte-
gerrimis. *Sp. Pl.* 699. *Willd.* 2. *p.* 1029.

MESEMBRYANTHEMUM foliis robustis albicantibus. *Hort. Elth.*
243. *t.* 189. *f.* 232. cum fructu sed sine flore.

FICOIDES *africana*, folio triangulari ensiformi glauco crasso,
flore amplo aureo. *Bradl. Succ.* 5. *p.* 10. *t.* 43.

FICOIDES *africanum* triangulari robustissimo folio. *Herm.*
Parad. 172.

The white-leaved FIG-MARIGOLD is one of those species which
are more shy of flowering than many of the genus.

Mr. Haworth ranks it among the afternoon flowering
ones. Mr. GEORGE GRAVES, in whose collection this species
blossomed last summer, informs us, that with him, the flow-
ers opened regularly at eight in the morning, and continued
open for two hours only; at eight in the evening they ex-
panded, and closed at ten. They diffuse an agreeable scent
while open, especially in the evening. Flowers in June, July,
and August. Propagated by cuttings. Requires the same
treatment as the rest of the genus. Our drawing was taken
several years ago at the late Mr. GRIMWOOD's nursery.



MESEMBRYANTHEMUM AUREUM.
GOLDEN FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa linearia. *Capf.* carnofa infera polyſperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM aureum foliis cylindrico-triquetris punctatis distinctis, pistillis atro purpurascensibus. *Linn. Syst. Nat. ed. 10. p. 1060. Ait. Kew. v. 2. p. 190.*

This Mesembryanthemum is one of the taller and more upright species, as well as the earliest in point of flowering, producing its blossoms from February to May; these are large and of a bright orange hue, the pistilla in the centre are purple, and serve at once to distinguish and embellish them.

It was first described in the 10th ed. of *Linn. Syst. Nat.* and afterwards inserted in the *Hort. Kew.* of Mr. AITON, who informs us that it is a native of the Cape, and was cultivated by Mr. MILLER, in the year 1750. Prof. MURRAY omits in his 12th ed. of the *Syst. Vegetab.* of LINNÆUS, as does Prof. GME-LIN in the last edition of *Linn. Syst. Nat.*

The facility with which this tribe in general is increased by cuttings is well known; this is reiled as readily as the others.

N^o 262



1796 by W. Curtis Sc Geo. Cresson del May 1794

MESEMBRYANTHEMUM BARBATUM. BEARDED
FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numeroſa, linearia. *Capſ.* carnoſa, infera, polyſperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *barbatum*, foliis ſubovatis papuloſis diſtinctis, apice barbatis. *Lin. Syſt. Vegetab.* p. 469.

MESEMBRYANTHEMUM *radiatum*, ramulis prolixis recumbentibus. *Dillen. Hort. Elth.* 245. t. 190. f. 234.



The leaves of this ſpecies have ſmall hairs, iſſuing like rays from their points, whence its name of *barbatum*; there are two others figured by DILLENIUS, whoſe leaves have a great ſimilarity of ſtructure, and which are conſidered by LINNÆUS as varieties of this ſpecies; our plant is the *Stellatum* of MILLER'S *Dict. ed.* 6. 4to.

Like moſt of this tribe it inhabits the Cape, flowers in July, and is readily propagated by cuttings.

MESEMBRYANTHEMUM BICOLORUM. TWO-
COLOURED FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numeroſa, linearia. *Capſ.* carnoſa, infera, polyſperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *bicolorum* foliis ſubulatis punctatis lævibus diſtinctis, caule fruteſcente, corollis bicoloribus. *Linn. Syſt. Vegetab. p.* 470.

MESEMBRYANTHEMUM *tenuifolium* fruticeſcens, flora croceo. *Dill. Elth. 267. t. 202. f. 258.*

Contrary to the *Meſembryanthemum dolabriforme*, lately figured in this work, this ſpecies expands its flowers in the daytime and that only when the ſun ſhines powerfully on them; on ſuch occaſions, the bloſſoms on the top of the branches being very numerous, exhibit a moſt ſplendid appearance.

It is a native of the Cape of Good Hope, flowers in July, and is moſt readily propagated by cuttings.

Like moſt of the Cape plants, it requires the ſhelter of a greenhouſe during the winter.



MESEMBRYANTHEMUM BOLUSII.

Native of South Africa.

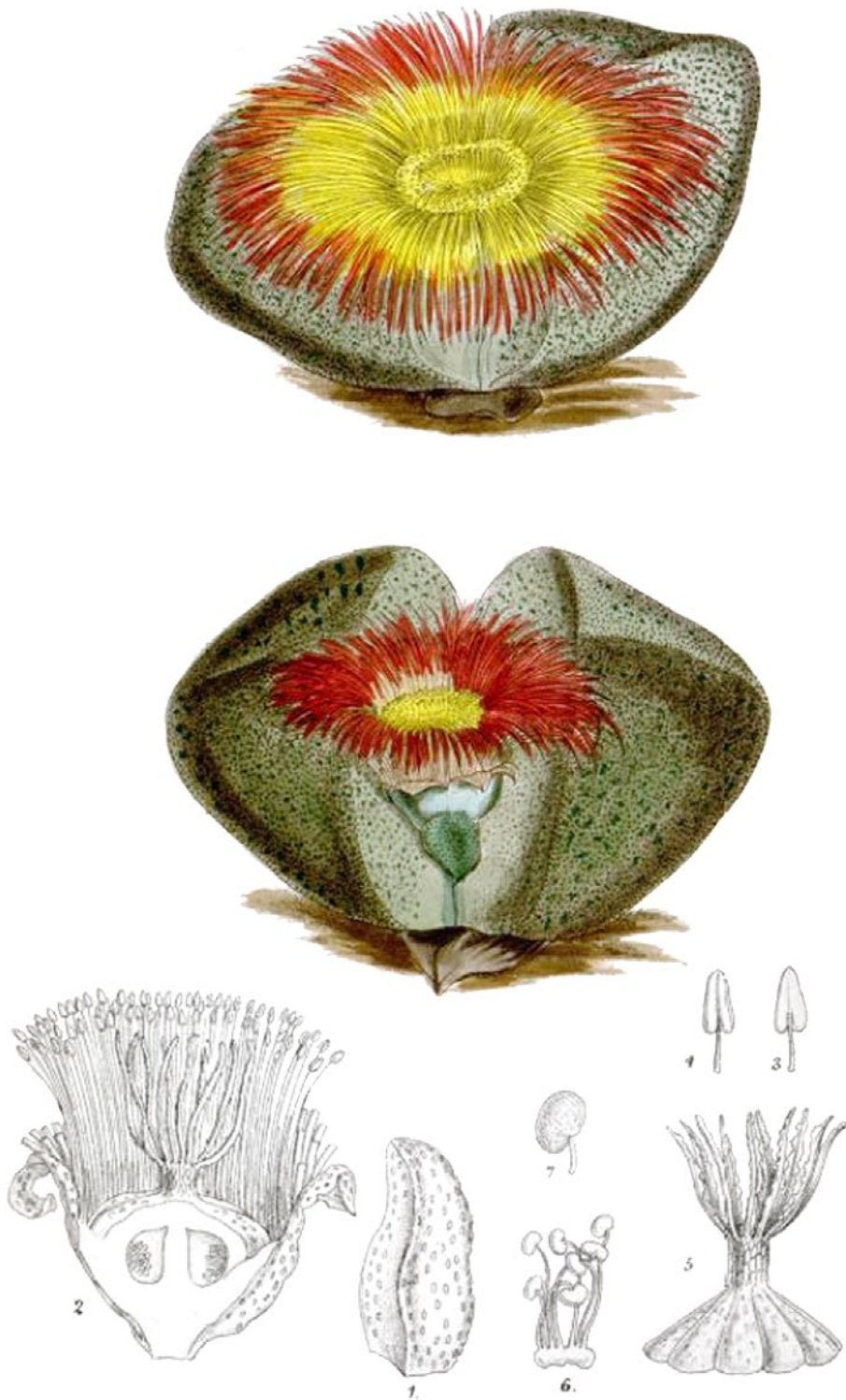
Nat. Ord. FICOIDEÆ.—Tribe MESEMBRYEÆ.

Genus MESEMBRYANTHEMUM, Linn.; (*Benth. et Hook. f. Gen. Pl.* vol. i. p. 863.)

MESEMBRYANTHEMUM *Bolusii*; acaule, late obconicum, 3–4 poll. diameter, glaberrimum, glaucum, griseo-virescens, creberrime granulato-punctulatum, foliis (maturis) 2 oppositis crassissimis subhemisphericis v. obscure 3-gonis, facie planis, dorso obscure et obtuse carinatis marginibus obtusis, floribus 1–2 sessilibus 2–3 poll. diam. 2–4-bracteatis, calycis tubo obconico limbo 6-lobo, lobis oblongis obtusis recurvis, petalis perplurimis liberis 2–3-serialibus angustissime linearibus infra medium flavis dein rubris, staminibus numerosissimis multiseriatis calycis lobis duplo longioribus, ovarii vertice late conico 10-sulcato, stylo brevi crasso, stigmatibus 10 crassiuscule filiformibus rugulosis.

This is quite as singular a plant as its ally, *M. truncatellum* (Plate 6077 of this work), but is even more bizarre in form and colour, the almost filiform and most delicate petals contrasting strangely with the lumpy ungainly form of the leaves over which they spread. As a species it appears to be entirely new, nor is it easy to say to which of the sections of the genus under Sonder's arrangement (in Harvey's "Flora Capensis," vol. ii. p. 392) it should be referred, differing as it does from the *Spheroidea* in the leaves not being connate to near the apex, or the petals united at the base; from the *Subquadrifolia* in having only two leaves, and in the many stigmas; and from the *Aloidea* in the leaves being only two, and not attenuate to the apex. The discovery of this singular plant is due to Mr. H. Bolus, F.R.S., a very able South African botanist, who sent plants of it to Kew some years ago. These were exhibited in the Succulent House, from which they suddenly disappeared in 1877. For the specimen here figured I am indebted to Mr. Peacock, of Sudbury House, Hammersmith, whose beautiful collection of Cacti and Aloes was so long deposited by him in the south octagon of the Temperate House for

DECEMBER 1ST, 1882.



the inspection of the public. It flowered in July of this year. He informs me that it was sent with several others from Graham's Town, and that the flower opens by five o'clock.

DESCR. A stemless dwarf succulent plant, consisting at maturity of two fully-formed leaves, placed at right angles to a pair of small withered ones at their bases, and one or two sessile flowers between them. *Leaves* trigonously hemispherical, two inches in diameter, of a dull grey green, covered with minute green pustular spots; face or upper surface nearly flat, back obscurely bluntly keeled and slightly laterally compressed, margins rounded. *Flowers* sessile between the leaves, two to three inches in diameter, with two fleshy oblong trigonous bracts at the base placed at right angles to the leaves. *Calyx-tube* half an inch in diameter, turbinate; lobes six, oblong, revolute. *Petals* very numerous, two-thirds to one and a quarter inch long, in several series, very narrowly linear, almost filiform, spreading and recurved, free at the base, yellow below the middle, dull red beyond it. *Stamens* very numerous, in many series, twice as long as the calyx-lobes. *Ovary* with a low ten-grooved conical crown, ending in a short thick style; stigmas ten, filiform and rugose.—*J. D. H.*

Fig. 1, Bracts; 2, vertical section of flower with the petals removed; 3 and 4, anthers; 5, top of ovary; 6, ovules; 7, single ovule:—*all enlarged.*

TAB. 6985.

MESEMBRYANTHEMUM BROWNII.

Native of South Africa.

Nat. Ord. FICOIDEÆ.—Tribe MESEMBRYEÆ.

Genus MESEMBRYANTHEMUM, Linn.; (*Benth. et Hook. f. Gen. Pl.* vol. i. p. 853.)

MESEMBRYANTHEMUM *Brownii*; fruticulus compactus, erectus, ramosus, glaberrimus, ramis gracilibus, foliis semipollicaribus teretiusculis acutis subpustulatis pallide glauco-viridibus basi lata insertis, floribus ternis solitariisve 1 poll. latis læte purpureis, demum ochraceis, calycis tubo brevi turbinato, lobis 2 multo majoribus subdolabriformibus dorso cornutis ceteris ovatis obtusis mucronatis, petalis pluriseriatis anguste spathulato-oblancoelatis apice retusis v. obtuse 2-dentatis, staminibus collectis, stigmatibus 5 crassis apicibus subulatis.

According to the arrangement into groups of the species of this vast genus by Pr. Salm Dyck, and as adopted in the Flora Capensis of Harvey and Senders, this beautiful species is technically referable to the *Tenuifloræ* along with *M. coccineum*, Haw. (*M. bicolorum*, Tab. 59, of this work); but, as Mr. N. E. Brown points out to me, its nearest affinity is with *M. polyanthum*, Haw., which is referred in the above work to the group *Scabra*, defined as having scabrous leaves. To add to this confusion, the group *scabra*, which in De Candolle's Prodrômus is placed in the great primary division of the genus with epapulose leaves, is in Salm Dyck's work and in Harvey and Senders, placed in the papulose division. Now the plant named *polyanthum* in the Kew collection has neither papulose nor scabrid leaves (nor are they so described and figured by Salm Dyck), in both which respects *M. Brownii* agrees with it, as it further does in the broad obtuse petals, whereas in all the species of the *tenuiflora* group the petals are slender and acuminate. With regard to scabridity of foliage, Mr. Brown, who has made a study of the genus, assures me that the term scabrid is used in it in a very loose sense, often applying merely to the roughness of leaf-surface produced by drying. These facts suggest the necessity of finding some more scientific classification of the species of this interesting genus than that hitherto adopted.

MARCH 1ST, 1888.



M. S. & J. N. P. 1888.

I. Reeve & Co. London.

Vincent Brooks Day & Son. 1888.

I have named this beautiful species after Mr. Brown, who has taken a great deal of trouble in the determination of the species of this troublesome genus. Mr. Watson, who is charged with the cultivation of the succulent plants at Kew, informs me that the flowers expand only in bright sunlight, and that the change of colour shown in the specimen figured is not accidental, but that the young flowers are invariably of a brilliant lustrous purple, and that they fade into ochreous or reddish yellow.

M. Brownii has been long grown at Kew under the name of *micans*; it flowers in July, and remains long in blossom. How far it may prove distinct specifically from *M. polyanthon*, I am not prepared to say; it differs from Haworth's and other descriptions of that plant in the total absence of scabridity, and from Salm Dyck's figure of it in the erect more shrubby habit and smaller flowers.

DESCR. A small erect much-branched shrub, about a foot high; branches slender, quite glabrous, not articulate at the nodes, covered with brown smooth shining bark. *Leaves* one-half to two-thirds of an inch long, in scattered pairs, or crowded on short lateral branches, terete, acute, fleshy, inserted by a broad base, pale glaucous green, not papillose, but obscurely pustulate with translucent slight prominences, giving an uneven appearance, more pronounced as the leaf dries; youngest leaves obscurely triquetrous or semi-terete. *Flowers* one to one and a quarter inches in diameter, solitary, or in threes at the ends of the branches, where each pedicel has a pair of leaves like the cauline, from deep ochreous red to bright red-purple; pedicels one-half to one inch, slender, hardly swollen below the calyx. *Calyx-tube* short, turbinate; lobes longer than the tube, two larger broader upwards, each produced into two rounded lobes with a short dorsal space between them; three smaller lobes ovate, obtuse, mucronate. *Petals* in several series, spreading from the base, straight, gradually dilated upwards, very narrowly spathulate, tip obtuse retuse or notched, often obliquely. *Stamens* shorter than the calyx, densely crowded. *Stigmas* five, subulate, from a very broad tumid base.—*J. D. H.*

Fig. 1, Leaf; 2, calyx and stamens; 3, petals; 4 and 5, stamens; 6, ovary with the sepals removed, and stigmas:—*all enlarged*.

MESEMBRYANTHEMUM COOPERI.

Native of South Africa.

Nat. Ord. FICOIDÆ.—Tribe MESEMBRYEÆ.

Genus MESEMBRYANTHEMUM, Linn. (*Benth. et Hook. f. Gen. Plant.*
vol. i. p. 853.)

MESEMBRYANTHEMUM (*Papulosa*) *Cooperi*; totum creberrime papulosum, glaucum herbaceum, perenne, ramosum, ramis decumbentibus, foliis oppositis patenti-recurvis semi-teretibus linearibus obtusis angulis obtusis facie subconvexa apicibus cylindraceis obtusiusculis glaberrimis, pedunculis terminalibus solitariis brevibus cylindraceis 1-rarissime 2-3-floris, floribus $2\frac{1}{2}$ poll. diametr. calycis tubo obconico lobis tubo æquilongis subacutis patenti-recurvis 2 ceteris longioribus, petalis exterioribus perplurimis 1-seriatis anguste linearibus roseo-purpureis, interioribus (v. staminodiis) multo brevioribus et angustioribus erecto-recurvis, staminibus confertis, antheris stramineis, stigmatibus 5-6 late subulatis.

This is a very handsome and free-growing species of *Mesembryanthemum*, filling a large pot with its blue-glaucous glistening stems and foliage, and bearing a handsome purple flower. It belongs to the *Crassulina* group of the *Papulosa* division, but differs very much from all previously described species, all of which have very slender stems. Its precise habitat is unknown; it was sent by Mr. Cooper when collecting in South Africa for Mr. Wilson Saunders, who, with his usual liberality, presented specimens to Kew, which flower annually in the month of June.

DESCR. A much-branched quite glabrous decumbent glaucous blue herb, forming large masses, clothed everywhere on stem, leaves, and calyx with close-set crystalline papillæ. *Branches* as thick as a duck-quill, cylindric, terete, not thickened at the nodes. *Leaves* rather close-set, opposite, one and a half to two inches long, spreading and recurved, nearly linear, gradually narrowed to the subobtuse apex, semi-terete, the angles of the upper surface rounded, very

AUGUST 1ST, 1877.



soft and fleshy; papillæ in rows, giving a minutely striate appearance to the leaf. *Peduncles* solitary, terminal, one- rarely two- or three-flowered, short, cylindric. *Flowers* two and a half inches in diameter. *Calyx* tube obconic, half an inch long; *lobes* five, spreading, longer than the tube, three of them shorter than the others, semi-terete obtuse or sub-acute. *Petals* of outer series twice as long as the calyx-lobes, very narrow, linear, rose-purple; inner series or staminodes one-third shorter, very narrow, suberect and recurved, also rose-purple. *Stamens* densely crowded in the centre of the flower, forming a small yellow disk about one quarter of an inch in diameter. *Stigmas* four or five, ovate-lanceolate, apiculate, seated on the top of the 5-lobed ovary.—*J. D. H.*

Fig. 1, Apex of leaf; 2, vertical section of flower; 3, top of ovary and stig-
mas:—*all magnified.*

MESEMBRYANTHEMUM DENSUM. GREAT
BEARDED-LEAVED FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numeroſa, linearia, baſi cohærentia, *Capſ.* carnoſa, infera, polyſperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *denſum*; foliis femicylindricis apice barbatis confertis, pedunculis hiſpidis, foliolis calycinis ſubæqualibus petalis bis brevioribus.

MESEMBRYANTHEMUM *denſum*; ſubacaulis foliis denſiſſime imbricatis connatis femicylindricis, ſupra concavis apice barbatis, calycibus hexaphyllis ſubæqualibus hiſpidis. *Haworth Meſem. p.* 302. *n.* 94.

MESEMBRYANTHEMUM *radiatum humile*, foliis majoribus. *Dill. Elth.* 248. *t.* 190. *f.* 236.

MESEMBRYANTHEMUM *barbatum*. *g. Sp. Pl.* 691. *Willd. v.* 2. *p.* 1046.



Mr. HAWORTH, the author of a monograph upon this genus has, in our opinion, very properly separated the three varieties of *M. barbatum* in the Species Plantarum into as many distinct species. The first of these is figured above (No. 72) and is at once distinguished from both the others by the leaves being generally so remote, as to shew a considerable space of stalk between each pair, and by the peduncles and calyxes being destitute of hairs.

The second variety, the *M. hirsutum* of HAWORTH, comes much nearer to our present plant but has smaller leaves and flowers,

flowers, and, which affords a good specific difference, has the leaflets of the calyx of unequal length, and much longer in proportion to the corolla than *M. densum*.

This plant, though not of difficult cultivation, is extremely shy of flowering, to much so, that Mr. HAWORTH, to whom we are indebted for the living specimen here figured informs us that it is one and twenty years since he has seen it in blossom.

Native of the Cape of Good Hope. Requires the same treatment as other succulent plants from that country; which conflicts chiefly in taking care that they are not injured by damp in the winter, and in protecting them from frost.

TAB. 8872.

MESEMBRYANTHEMUM DICHROUM.

South Africa.

FICOIDEÆ. Tribe MESEMBRYEÆ.

MESEMBRYANTHEMUM, Linn.; Benth. et Hook. f. Gen. Plant vol. i. p. 858.

MESEMBRYANTHEMUM (§ Calamiformia) dichroum, Rolfe; species nova e grege Calamiformium foliis triquetris et petalis dichrois facile distinguendum.

Herba breviter caulescens. Caules simplices vel parce ramosi, suberecti, 8–9 cm. longi. Folia 4–6, patentia, lineari-oblonga, acuta, triquetra, crassa, supra concava, subtus obtuse carinata, glauca, crebre et minute puncticulata, 4–6 cm. longa, 0.6–0.9 cm. lata, margine minutissime denticulata. Flores subsessiles, expansi 3.5–4 cm. diametro, albo-rosei. Calyx late campanulatus; lobi deltoideo-ovati, acuti. Petala numerosissima, patentia, circiter 1.8 cm. longa, basi alba, apice rosea. Stamina numerosa, erecta, circiter 1.5 cm. longa; filamenta albidula, infra medium villosa; antherae ovato-oblongae, obtusae, flavae. Stigmata 6, subclavata, brevia. —R. A. ROLFE.

This distinct and striking *Mesembryanthemum* was presented to Kew in 1910 along with various other succulent plants by Mr. G. H. Simpson Hayward, Icomb Place, Stoke-on-the-Wold. It has thriven satisfactorily under the treatment given to other species of the genus in a warm greenhouse, where it flowered in November, 1918, when our figure was prepared. Beyond the fact that it is South African nothing is known of its history, for there is no record of the district in which it was collected, and no very near affinity can be found or claimed for this species, which is new alike to horticulture and to science. In most respects *M. dichroum* accords with the members of the section *Calamiformia*, though it is at once distinguishable from all of these by having distinctly triquetrous in place of subterete leaves and in having petals with bright pink apices. It appears on the whole more satisfactory to include our plant provisionally among the *Calamiformia*, though as a somewhat anomalous member of the section, than to regard it as the type of a distinct section, though this

OCTOBER-DECEMBER, 1920.



may eventually be found to be necessary. *M. dichroum* is a pleasing addition to the succulents in cultivation owing to the colouring of the petals. It is a dwarf plant with very glaucous linear-oblong leaves and with shortly pedicelled flowers; the petals, otherwise white, are strongly suffused with pink towards their tips.

DESCRIPTION.—*Herb*, with short simple or sparingly branched suberect stems, 3–3½ in. high. *Leaves* 4–5, spreading, linear-oblong, acute, 3-quetrous, thick, concave above, bluntly keeled beneath, glaucous, closely and finely toothed. *Flowers* nearly sessile, 1½–1¾ in. across, white flushed with rose-pink. *Calyx* wide campanulate; lobes deltoid ovate, acute. *Petals* very many, spreading, about ¾ in. long, white below, rose-pink at the tips. *Stamens* many, erect, about ⅔ in. long; filaments whitish, villous below the middle; anthers ovate-oblong, obtuse, yellow. *Stigmas* 6, subelavate, short.

TAB. 8872.—Fig. 1, portion of a leaf, showing the apex; 2 and 3, stamens; 4, apex of ovary, with stigmas:—*all enlarged*.

MESEMBRYANTHEMUM DOLABRIFORME,
HATCHET-LEAV'D FIG-MARIGOLD

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa, linearia, *Capf.* carnofa, infera, polysperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *dolabrifforme* acaule foliis dolabri-
formibus punctatis. *Lin. Syst. Veg.*
p. 470.

FICOIDES *capensis humilis*, foliis cornua cervi referentibus, petalis
luteis noctiflora. *Bradl. suc.* 1. p. 11. t. 10. *Dillen Hort.*
Elth. t. 191. f. 237



Though many Latin names of plants, as *Geranium*, *Hepatica*, *Convolvulus*, &c. are more familiar to the ear, and more generally used than their English ones, yet *Mesembryanthemum* though used by some, appears too long, to be generally adopted, its English name of *Fig-marigold* is doubtless to be preferred.

The Fig-marigolds are a very numerous tribe, chiefly inhabitants of the Cape of Good hope; no less than thirty-three species are figured in that inestimable work the *Hortus Elthamensis* of Dillenius. As most of these plants grow readily from slips, or cuttings, and require only the shelter of a common greenhouse, and as they recommend themselves to our notice, either from the extreme singularity of their foliage, the beauty of their flowers, or the peculiarity of their expansion, so they are a favourite class of plants with many.

The present species is a native of the Cape of Good hope, and is particularly distinguished by having leaves somewhat resembling a hatchet, whence its name; it is as hardy as most, and flowers as freely, but its blossoms fully expand in the evening and night only.

It is very readily propagated by cuttings.

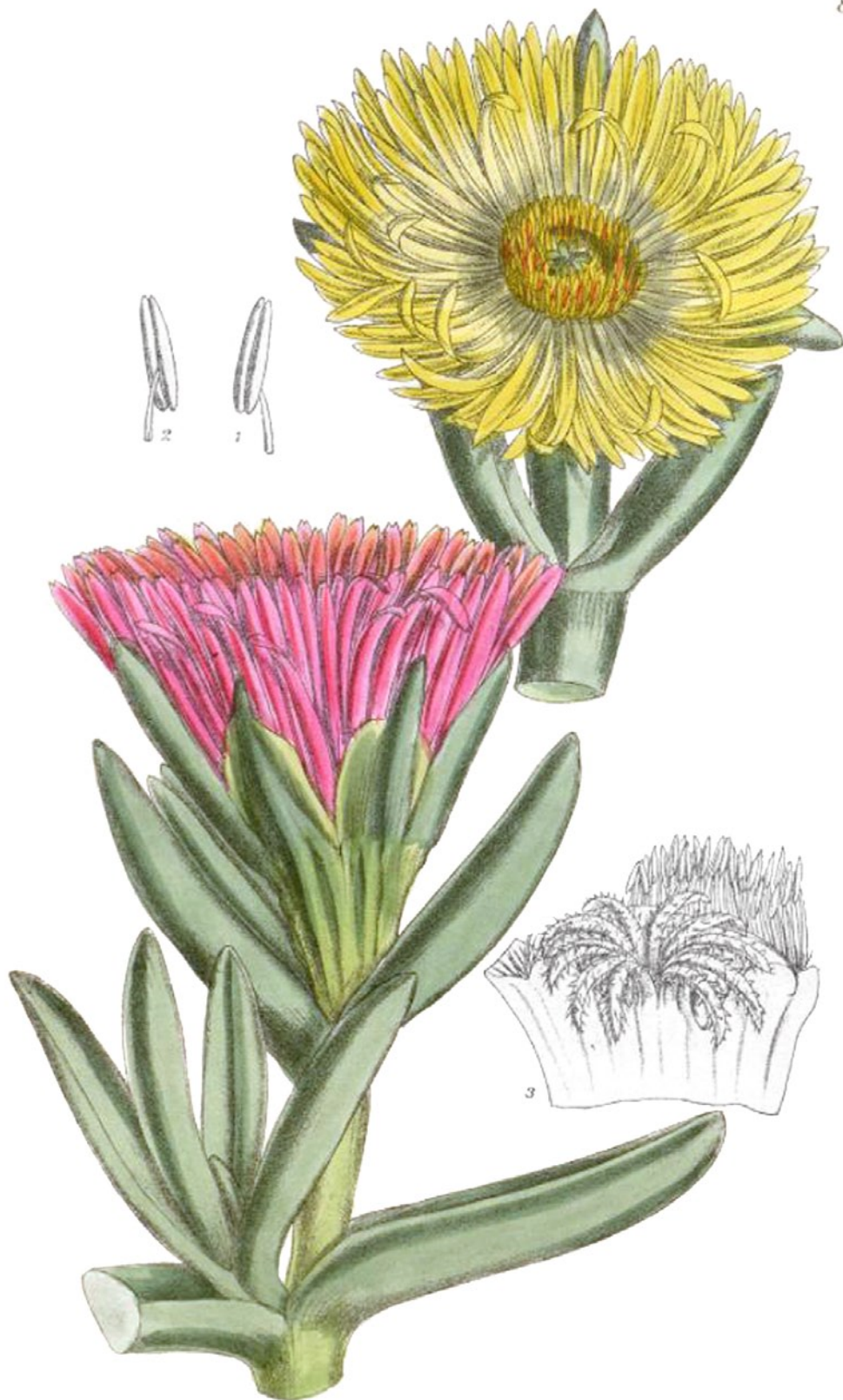
TAB. 8783.

MESEMBRYANTHEMUM EDULE.

South Africa.

FICOIDEAE. Tribe MESEMBRYANTHEMEAE.

MESEMBRYANTHEMUM, Linn.; Benth. et Hook. f. Gen. Plant. vol. i. p. 858.



Mesembryanthemum (§ Acinaciformia) **edule**, Linn. Sp. Pl. ed. 2, p. 695; Ait. Hort. Kew. ed. 1, vol. ii. p. 190; Haw. Obs. Mesemb. p. 392; Brongn. in Ann. Sc. Nat. sér. 3, vol. xviii. p. 234, 250, t. 10, fig. 25–28; Harv. et Sond. Fl. Cap. vol. iii. p. 412; Bolus et Wolley-Dod in Trans. S. Afr. Phil. Soc. vol. xiv. p. 265; Berger, Mesemb. pp. 208, 204, fig. 40, 1–5; Marloth, Pl. S. Afr. vol. i. p. 203, t. 50, fig. A, etiam in textu, fig. 92; N. E. Br. in Gard. Chron. 1885, vol. xxiv. pp. 145, 266; J. Hutchinson in Gard. Chron. 1917, vol. lxii. p. 31; species a *M. acinaciforme*, Linn., foliis subaequaliter triquetris oblongis nec obovato-oblongis, et floribus flavis vel senescentibus carneis nec violaceo-rubris statim distinguenda.

Herba succulenta, valde ramosa, procumbens vel pendula, 0·5–1 m. longa, ramulis crasiusculis angulatis. *Folia* opposita, sessilia, oblonga, subobtusata, subaequaliter triquetra, subincurva, crasso-carnea, viridia, 4–7 cm. longa, circiter 1 cm. lata. *Flores* terminales, solitarii, 7–8 cm. diametro, primum flavi demum carnei. *Calycis* tubu turbinatus, 2–2·5 cm. longus; lobi inaequales, ovati vel oblongi, subobtusati, 2–8 cm. longi. *Petala* patentia, numerosissima, lineari-oblonga, flava sed senescentia carnea. *Stamina* numerosissima, brevissima; antherae lineari-oblongae, flavae. *Stigmata* subsessilia, numerosa, reflexa. *Fructus* turbinatus, grandis, edulis.—*M. acinaciforme*, var. *flavum*, Linn. Sp. Plant. ed. 1, p. 485. *M. falcatum majus flore amplo luteo*, Dill. Hort. Eltham. p. 283, t. 212, fig. 212, 272 (1782). *M. sive Flos meridianus Africanus triangulari folio frutescens maximus procumbens frutu turbinato edule flore luteo*, Breyn. Podr. vol. ii. p. 67 (1689). *Chrysanthemum Aisoides Africanus triangulari folio flore aureo*, Breyn. Exot. Pl. cent. i. p. 163 (1678).—R. A. ROLFE.

No *Mesembryanthemum* to be met with in succulent collections is more handsome than the long known *M. edule*, figured here from material obtained by Mr. J. Hutchinson on the face of an old quarry at the entrance to Caerthillian Valley in Cornwall, where it is thoroughly naturalised in company with the Australian and Chilean species *M. aequilaterale*, Haw. A native of South Africa, *M. edule*, in most parts of Britain, requires the protection of a greenhouse during winter. But in certain localities in Cornwall, South Devon and Jersey, it is now established
OCTOBER-DECEMBER, 1918.

as an alien, and in those parts of the United Kingdom with a similar climate the species is hardy and is seen to best advantage when planted along the top of a low wall and allowed to hang down. It thrives best if planted in poor sandy soil, and may be propagated with ease by cuttings taken at any season. The nearest ally of *M. edule* is another Cape species, *M. acinaciforme*, Linn., figured at t. 5539 of this work. The two are readily distinguished, when alive, by their differently coloured flowers and their differently shaped leaves. As seen in dried specimens, however, they are not always easily discriminated, and when Linnaeus enumerated both in 1753 he regarded them as varieties of one species. Ten years later Linnaeus recognised the species now described as distinct, and this judgment has never since been challenged. *M. edule* and *M. acinaciforme*, together with the somewhat similar *M. aequilaterale* which, however, is confined to the Pacific coasts of America and to Australia, but does not occur in S. Africa, were grouped by Haworth in the section *Acinaciformia*, which, as Marloth points out, differs from all other sections of the genus in bearing fleshy fruits—in the S. African species known as Zuurvygen or Hottentot figs—with numerous small seeds embedded in a subacid edible pulp; in other sections the fruits are dry capsules. The cultural history of *M. edule* began long before it received that name. In 1732 it was, as a figure by Dillenius shows, in the garden of Sherard at Eltham. Moreover it was, as Dillenius knew, in the Breynian collection; Breyn tells us it was in his garden in Holland in 1668.

Description.—*Herb*, succulent, much branched, prostrate or pendulous, 2–4 ft. long, with rather stout angular branches. *Leaves* opposite, sessile, oblong, rather blunt, more or less 3-gonous, somewhat incurved, thickly fleshy, green, $1\frac{3}{4}$ –3 in. long, over 3 in. wide. *Flowers* terminal, solitary, about 3 in. across, yellow when they open, changing later to flesh-coloured. *Calyx* with a turbinate tube, $\frac{3}{4}$ –1 in. long; lobes ovate or oblong, rather blunt, unequal, $\frac{3}{4}$ – $1\frac{1}{4}$ in. long. *Petals* spreading, very many, linear-oblong. *Stamens* very many, short; anthers linear-oblong, yellow. *Stigmas* subsessile, numerous, reflexed. *Fruit* turbinate large, edible.

TAB. 8783.—Fig. 1, stamen seen from in front; 2, the same, seen from behind 3, section of calyx-tube, showing tamens and stigmas:—*all enlarged*.

TAB. 8776A.

MESEMBRYANTHEMUM FULVICEPS.

South Africa.

FICOIDEAE. Tribe MESEMBRYANTHEMEAE.

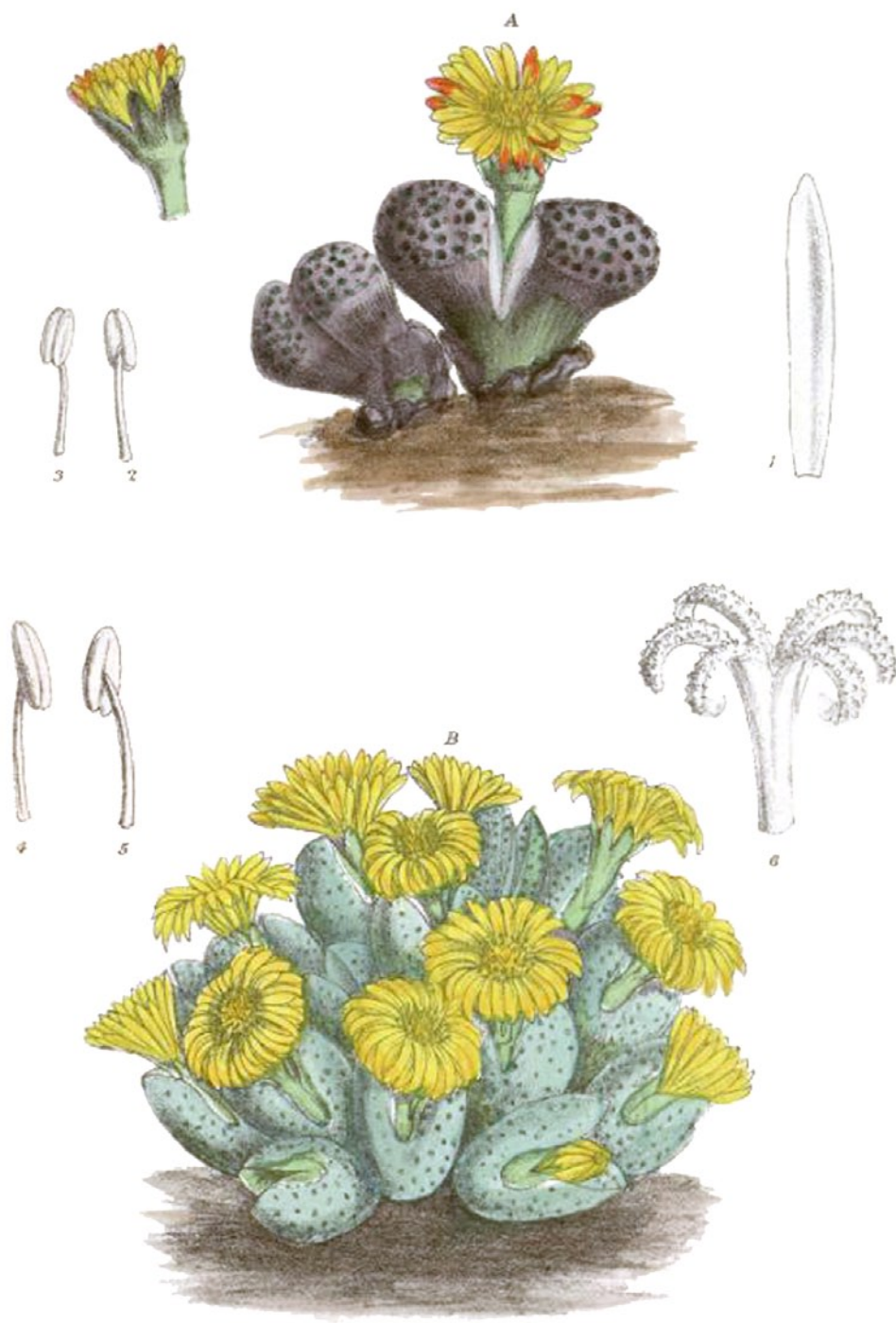
MESEMBRYANTHEMUM, Linn.; Benth. et Hook. f. Gen. Plant. vol. i. p. 853.

Mesembryanthemum (§ Sphaeroidea) **fulviceps**, N. E. Br. in Kew Bull. 1914, p. 167; affine *M. Lesliei*, N. E. Br., fissura inter folia multo profundiore et apicibus foliorum fulvis maculis parvis rotundatis atroviridibus notatis apte tamen distinguenda.

Herba succulenta, perparva, acaulis; radix descendens, elongata. Folia 2, in corpusculum ultra medium connata. Corpuacula subsolitaria vel sub-caespitosa, 2·5–4·5 cm. longa, obconica, laevia glabra, apice 2·5–2·8 cm. lata, truncata, fissura transversa notata, fulva, maculis parvis rotundatis sordide atroviridibus ornata, lateribus leviter purpureo-cinerascentia opaca; fissura 7–8 mm. alta. Flores breviter pedicellati, 2·5 cm. diametro. Calyx circiter 1 cm. longus, 5-lobus; tubus breviter exsertus; lobi oblongi, obtusi, 0·5–0·6 cm. longi. Petala patentia, linearia, obtusa, circiter 1·2 cm. longa, lutea versus apicem rubro-aurantiaca. Stamina suberecta filamenta gracilia; antherae ellipsoideae.—R. A. ROLFE.

The little *Mesembryanthemum* here figured is a member of the *Sphaeroidea* section of the genus, characterised by the leaves being reduced to a single pair, united to form a more or less globose or ovoid mass termed a "corpusculum." It is a native of Great Namaqualand, where it was collected by the late Professor H. H. W. Pearson of Cape Town in the course of the Percy Sladen Expedition to the Great Karasberg Range. In its native habitat it grows on sandy plains at an elevation of 4,300 feet above the sea. Living plants were presented to Kew by Professor Pearson in the early part of 1913, and had not yet flowered when in June, 1914, a description of the species was published by Mr. N. E. Brown. In October, 1915, however, a plant flowered in the collection of succulents at Kew and admitted of the preparation of our illustration. The nearest ally of this Namaqualand plant is *M. Lesliei*, N. E. Br., a native of the Transvaal in which, however, the leaves are more completely confluent into

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an obovoid truncate corpusculum with markings of a somewhat reticulated character, while the petals are longer, more reflexed and relatively narrower.

DESCRIPTION.—*Herb*, fleshy, small and stemless, with a rather long tap-root. *Leaves* 2, connate beyond their middle to form a fleshy corpuscle. *Corpuscles* at times 1–2, at times several and caespitose, obconic, $1-1\frac{3}{4}$ in. long, truncate and about 1 in. wide at the top, which is marked by the transverse fissure due to the incomplete union of the component leaves, smooth, glabrous, with small rounded dark green spots on the tawny apical surface, uniformly dull grey-purple on the sides; the transverse fissure about $\frac{1}{3}$ in. deep. *Flowers* shortly pedicelled, 1 in. across. Calyx over $\frac{1}{3}$ in. long, 5-lobed; tube shortly exserted; lobes oblong, obtuse, about $\frac{1}{4}$ in. long. *Petals* spreading, linear, obtuse, about $\frac{1}{2}$ in. long, yellow with orange-red tips. *Stamens* suberect; filaments slender; anthers ellipsoid.

TAB. 8776A.—Fig. 1, petal; 2 and 3, stamens:—*all enlarged*.

TAB. 8776B.

MESEMBRYANTHEMUM ELISHAE.

South Africai

FICOIDEAE. Tribe MESEMBRYANTHEMEAE.

MESEMBRYANTHEMUM, Linn.; *Benth. et Hook. f. Gen. Plant.* vol. i. p. 858.

Mesembryanthemum (§ Cordiformia) **Elishae**, *N. E. Br. in Gard. Chron.* 1916, vol. lx. p. 252; affine *M. styloso*, N. E. Br., sed foliis punctatis multo brevioribus et stylis valde recurvis differt.

Herba succulenta, nana; radix descendens. *Folia* 2, in corpusculum semi-connata. *Corpuscula* dense caespitosa, 1·4–2·5 cm. longa, 1·2–2 cm. crassa, subobovoidea, apice valde compressa lobis erectis carinatis, glabra, coeruleo-viridia, obscure punctata. *Flores* breviter pedicellati, 2·1 cm. diametro. *Calyx* 3–5-lobus, submembranaceus, pallide virescens lobis rubescentibus. *Petala* 35–45, 3-seriata, linearia, apice 2-fida vel obtusa, inferne in tubum connata, lutea. *Stamina* indefinita, lutea. *Stigmata* 5–6, filiformia, pallide lutea, inferne in stylum columnarem connata.—R. A. ROLFE.

The small *Mesembryanthemum* now figured is a member of the section *Cordiformia*, based originally by Mr. A. Berger on *A. bilobum*, Marloth, but which is now known to include at least three other species: *M. gracilipes*, Bolus; *M. stylosum*, N. E. Br., figured at t. 8595B of this work; and *M. Elishae*, the species here described. The section is characterised by the very fleshy, somewhat elongated leaves being more or less united at the base but remaining free above so that the resulting corpusculum is more or less heart-shaped. The precise habitat of this species in South Africa has not been recorded. It appeared originally in this country in the collection of Mr. G. Elisha, Canonbury Park Road, a keen cultivator of species of *Mesembryanthemum*. The specimen here depicted flowered with Mr. Elisha in October, 1916, and was described by Mr. N. E. Brown. Since then Mr. Elisha has presented a plant to Kew. Mr. Brown has remarked that the nearest allies of *M. Elishae* are *M. bilobum* and *M. stylosum*, but it differs from both in its dwarfer and relatively shorter growths, which form

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very compact clusters. The neat habit and the markedly glaucous green with scattered darker dots of the half-con-nate leaves give it a pleasing appearance. The flowers are bright yellow, expanding in full sunshine and closing at night.

DESCRIPTION.—*Herb*, succulent, dwarf; root descending. *Leaves* 2, connate to their middle to form a fleshy corpuscle. *Corpuscles* densely tufted, $\frac{2}{3}$ –1 in. long, $\frac{1}{2}$ – $\frac{3}{4}$ in. thick, somewhat obovoid, much compressed at the apex with erect keeled lobes, glabrous, bluish-green, indistinctly marked with darker dots. *Flowers* shortly pedicelled, $\frac{3}{4}$ in. across. *Calyx* 3–5-lobed, somewhat membranous, pale green with the lobes becoming reddish. *Petals* 35–45, 3-se-riate, linear, 2-fid or obtuse at the tip, connate below in a tube, bright yellow. *Stamens* many, yellow. *Stigmas* 5–6, filiform, pale yellow, connate below in a columnar style.

TAB. 8776B.—Fig. 4 and 5, stamens; 6, pistil:—*all enlarged*.

MESEMBRYANTHEMUM INCLAUDENS,
NEVER-CLOSING FIG MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa, linearia, basi cohærentia, *Capf.* carnosa, infera, polysperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *includens*; foliis dolabriformibus acie crenulata, corollis semper apertis: petalis interioribus teretibus abbreviatis.

MESEMBRYANTHEMUM *includens*; foliis triquetris subdeltoidibus lævibus perviridibus, carina gibbosa, corollis includentibus, petalis interioribus valde abbreviatis imbricatisque. *Haworth Syn. Succul. p. 295. Idem in Bot. Repos. 388.*

This is one of the most desirable species of this numerous genus, both on account of the brilliancy of its flowers and because they remain fully expanded, night and day. Flowering branches when cut off will continue unchanged for days together; so that they may be worn in the hair or bosom, without danger of drooping from the heat of the ball-room; but they are without scent. There are several other species which have their blossoms always expanded, all of which, Mr. HAWORTH remarks, are well adapted to the above purpose; and if fragrance be an object, the addition of some of the night-flowering species will supply that also.

The



The redness of the leaves and branches depends much upon the plant's being exposed to sun and air, though the apex of the leaves and part of the stems in the neighbourhood of the joints, under all circumstances, shew a greater or less tinge of this colour.

Native of the Cape of Good Hope. Flowers in June, July, and August. Introduced about the year 1802. Requires to be protected from frost and from damps. Communicated by the Hon. WILLIAM HERBERT.

TAB. 6057.

MESEMBRYANTHEMUM INTRORSUM.

Native of South Africa.

Nat. Ord. FICOIDEÆ.—Tribe MESEMBRYEÆ.

Genus MESEMBRYANTHEMUM, Linn.; (*Benth. and Hook. f. Gen. Pl.*, vol. i. p. 853).

MESEMBRYANTHEMUM *introrsum*; ramulis effusis erecto-decumbentibus, junioribus hispidulis foliisque minute celluloso-tessellatis, foliis remotis $\frac{1}{2}$ -cylindraceis patenti-recurvis apice sepalisque penicillatim barbatulis, setis ad 10 badiis, floribus terminalibus solitariis gracile pedunculatis, calycis tubo turbinato, lobis subcylindraceis duobus majoribus, petalis sub-2-seriatis radiantibus anguste linearibus ochraceis vitellinis roseis v. rubris, filamentis albis externis anantheris, stigmatibus 5 minutis conico-recurvis.

MESEMBRYANTHEMUM *introrsum*, Haworth in *Phil. Mag.*, 1824, p. 428. *ex DC. Prod.*, vol. iii. p. 440. *Salm Dyck, Monog. Mesemb.*, fasc. 52, f. 2. *Harv. and Sond. Fl. Cap.*, vol. iii. p. 446.

There are many good reasons for encouraging the cultivation of the once favourite genus *Mesembryanthemum*, amongst which not the least is their duration, for when once established they need never be lost; they are further ever-green, cost little in soil and cleaning, and many of them are amongst the most brilliantly coloured greenhouse plants. The subject of the present plate has been established at Kew for at least half a century. The first notice I find of it is in the work of Haworth, quoted above, who states that it was cultivated in Kew in 1824. I do not, however, find it described in the second edition of "*Hortus Kewensis*," published in 1811, where 175 species are enumerated as then in cultivation in the Royal Gardens; a number reduced in 1855 to 157, and now increased to 225, including some varieties and species that have not yet flowered. Upwards of 300 species are described from the Cape alone, in Harvey and Sonders' *Flora*.

DESCR. *Stem* branched from the base; branches a foot and more long, at first erect, then prostrate or pendulous, as
SEPTEMBER 1ST, 1873.

thick as a sparrow quill, and like the surface of the leaves tessellated and papillose with bladdery cells; young parts minutely hispid, each papilla bearing a bristle. *Leaves* in distant pairs, about one inch long, somewhat recurved, semi-terete, with very rounded sides, tipped with a pencil of about ten spreading brown bristles, connate at the base, light green, fleshy. *Flowers* three-fourths of an inch in diameter, on long slender terminal peduncles. *Calyx-tube* turbinate hemispheric, obscurely obtusely angled, green; limb of five spreading and recurved segments like the leaves, of which two exceed the petals, and are tipped like the leaves with bristles. *Petals* biseriate, the inner shorter, narrow linear, obtuse, very various in colour, white fading to rose-colour, or ochreous, or red. *Stamens* short, filaments white; the outer with imperfect anthers. *Stigmas* five, small, short, conic, recurved.—*J. D. H.*

Fig. 1, Portion of stem and leaves; 2, vertical section of flower; 3, stigmas:—*all magnified.*

MESEMBRYANTHEMUM MICANS. GLITTER-
ING FIG-MARYGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa, linearia, *Capf.* carnofa, infera, polysperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *micans* foliis subcylindricis papulosis distinctis, caule scabro. *Linn. Syst. Veg. ed. 14. Murr. p. 470. Ait. Kew. v. 2. p. 190.*

MESEMBRYANTHEMUM *micans* flore phœniceo: filamentis atris. *Dill. Elth. 292. t. 215. f. 1282.*

FICOIDES capensis, tereti folio, flore croceo. *Pet. gaz. t. 7. f. 9.*

FICOIDES capensis, folio tereti argenteo, petalis perplurimis aurantiacis. *Bradl. Succ. 1. p. 9 t. 8.*



The *Mesembryanthemum micans*, so called from the glittering particles, which are conspicuous on its stalks and leaves, is a species which has long been introduced to our gardens (having been cultivated by Prof. BRADLEY in 1716) for the beauty of its flowers, which in richness of colour are indeed surpassed by few; they are produced in the months of July and August but do not expand fully, unless the sun shines powerfully on them; nor do they long retain that regular expansion observable in some species, but quickly assume a somewhat ragged appearance; nevertheless, upon the whole, it is one of those species which is highly deserving of culture, by those who are partial to this tribe of plants.

It is a native of the Cape, and readily propagated by cuttings. Varies with flowers of a paler hue.

MESEMBRYANTHEMUM MINUTUM. TINY
FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa, linearia, basi cohærentia, *Capf.* turbinata, infera, polysperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *minutum*; acaule, subglobosum, apice concavo floriferum, corolla infundibuliformi.

MESEMBRYANTHEMUM *minutum*; (acaule, obconicum, floribus sessilibus) læve glaucum immaculatum, petalis læte rubicundis. *Haworth Mesemb. p.* 126. *Misc. Nat. p.* 1.



The petals in this genus for the most part slightly cohere at the base; in some they form a short tube; but in this species they unite into a tube above a quarter of an inch in length, narrowing downwards so as to give the corolla somewhat the form of a funnel. The plant consists of a congeries of fleshy knobs, roundish, hollowed at the apex. From the centre of this depression the flower is produced. "HAWORTH considers these button-like substances as the leaves, WILLDENOW, in a nearly-related species (*minimum*) as the stems. The former of course characterizes it as *acaule* or stemless, the latter would call it *aphyllum* or leafless.

What renders this elegant little vegetable the more acceptable is, that it produces its lively flowers from the middle of November to near Christmas.

Our specimen was kindly communicated by Mr. HAWORTH, from his very extensive collection at Little Chelsea. This adds to the value of our figure, from the certainty of its representing the plant intended by the intelligent author of the monograph on this genus.

Native of the Cape of Good Hope. Requires to be defended from frost, and, after it has done flowering, to be kept without water during the rest of the winter.

TAB. 8814.

MESEMBRYANTHEMUM NOBILE.

South Africa.

FICOIDEAE. Tribe MESEMBRYEAE.

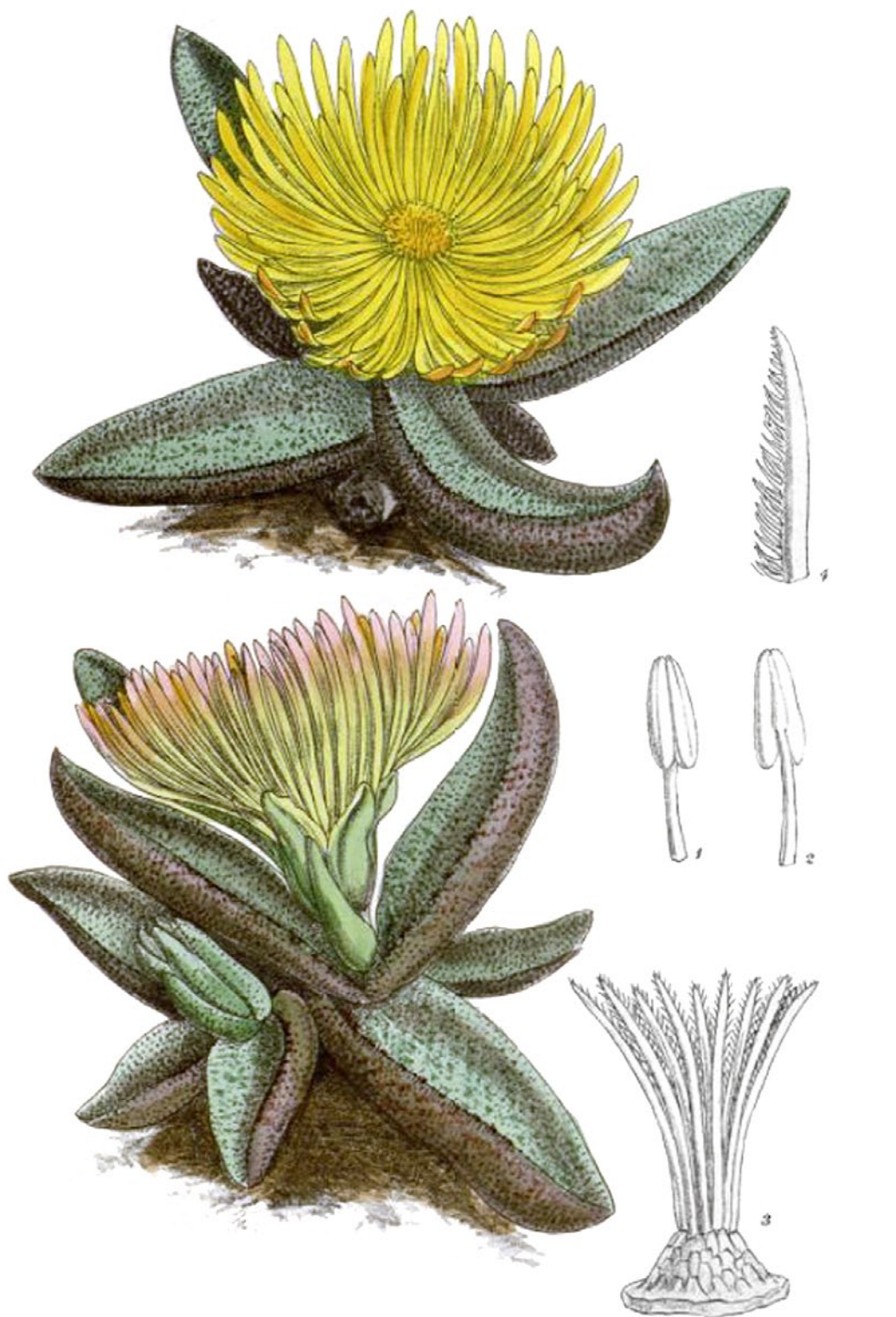
MESEMBRYANTHEMUM, Linn.; Benth. et Hook. f. Gen. Plant. vol. i. p. 853.

Mesembryanthemum (§ Magnipuncta) *nobile*, Haw. in *Phil. Mag.* vol. lxii. (1823), p. 381; *DC. Prodr.* vol. iii. p. 419; *Salm-Dyck, Mesemb.* fasc. iv. t. 1; *Harv. & Sond. Fl. Cap.* vol. ii. p. 396; *Berger, Mesemb.* pp. 263, 264, fig. 56; species *M. magnipunctatum*, Haw., valde affinis, foliis angustioribus subfalcatis et magis glaucescentibus differt.

Herba parva, acaulis. Folia 4–6, basi connata, patentia vel subrecurva, oblonga, subobtusata, crassa, supra planiuscula, subtus subtriquetra, 4–6 cm. longa, 1.3–1.5 cm. lata, glaucescentia, crebre viridi-punctata. Flores subsessiles, speciosi, 5–6 cm. diametro. Pedunculi subobsoleti, crassi, bractei duabus carnosissubfoliaceis instructi. Calyx subglobosus, circiter 2 cm. longus, 5–6-fidus; lobi lanceolato-oblongi, subobtusati, carnosissimi. Petala pluriserialia, linearia, aurea, 2.5–3 cm. longa. Stamina numerosa; antherae oblongae. Ovarium subglobosum, supra conicum, verruculosum; styli circiter 16, erecti, subulati, facie plumulosi.—*M. magnipunctatum*, var. *affine*, Haw. Revis. Pl. Suce. p. 87.—R. A. ROLFE.

The section *Magnipuncta*, recognised by Haworth within the large and polymorphic genus *Mesembryanthemum*, includes only two forms, the original *M. magnipunctatum*, Haw., and the one now figured, which Haworth at first was inclined to regard as only a variety of *M. magnipunctatum*, but at a later date treated as a distinct species, *M. nobile*. The original *M. magnipunctatum* was based on a plant collected by Burchell and cultivated at Kew nearly a century ago. There is a coloured drawing in the Herbarium collection of a flowerless example which was collected on the heights near the Zekoe River by Bowie in 1818. When Haworth indicated the existence of the variety *nobile*, he tentatively referred to that variety the plant regarded by Prince Salm-Dyck as *M. magnipunctatum*, and this plant became the type of *M. nobile*, Haw., in 1823. There is at Kew a coloured drawing of Haworth's second species which is noted as having been received from Prince Salm-Dyck. The

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plant shown in that drawing is again without blossom, but the species was afterwards figured in Salm-Dyck's monograph. Salm-Dyck obtained his plant in 1814 from Vienna. Since then *M. nobile* has been collected at the Gamka River, Prince Albert Division, Cape Colony, by Zeyher, and, according to Berger, it has also been met with by Marloth in the adjacent Beaufort West Division. Plants both of *M. magnipunctatum* and *M. nobile* were presented to Kew in 1916 by Mr. Cecil Hanbury, from the La Mortola collection, and the figure of the latter now given has been prepared from the La Mortola example, which agrees well in its essential characters with those of Bowie and Salm-Dyck. The differences between the two allied species are well shown by the examples of each now grown at Kew, where they thrive well and flower in summer in a green-house.

DESCRIPTION.—*Herb*, small and stemless. *Leaves* 4–6, connate at the base, spreading or slightly recurved, oblong, rather blunt, thick, flattish above, slightly angled beneath, $1\frac{3}{4}$ – $2\frac{1}{4}$ in. long, $\frac{1}{2}$ – $\frac{2}{3}$ in. wide, glaucescent, closely dotted with green spots. *Flowers* almost sessile, showy, 2 – $2\frac{1}{4}$ in. across. *Peduncles* nearly obsolete, thick, with two fleshy bracts resembling the leaves. *Calyx* nearly globose, about $\frac{3}{4}$ in. long, 5–6-lobed; lobes lanceolate-oblong, rather blunt, fleshy. *Petals* several-seriate, linear, golden-yellow, 1 – $1\frac{1}{4}$ in. long. *Stamens* many; anthers oblong. *Ovary* nearly globose, conical upwards, finely verrucose; styles about 16, erect, subulate, slightly plumose on the face.

TAB. 8814.—Fig. 1, stamen, seen from in front; 2, the same, seen from behind; 3, apex of the ovary, with styles; 4, a stigma:—*all enlarged*.

MESEMBRYANTHEMUM OBCORDELLUM. HEART-SHAPED FIG-MARIGOLD; OR GLAUCOUS CHECQUERED DUMPLIN.

Class and Order.

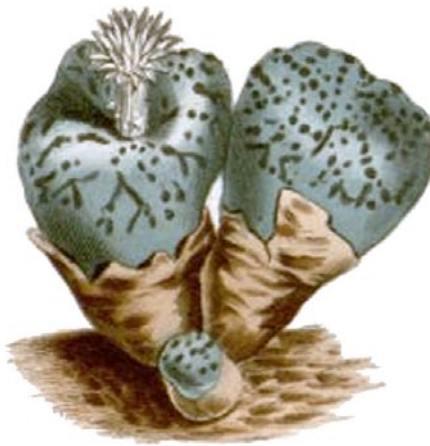
ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa linearia, basi cohrentia, *Caps.* carnofa, infera, polysperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *obcordellum*; (acaulis) glaucescens, corolla albicante maculis confluentibus ramosis germine incluso. *Haworth Misc. Nat.* 21. *Ejusdem Syn. Pl. Succulent.* p. 203. *Hort. Kew. ed. alt.* 3. p. 213.



This curious little MESEMBRYANTHEMUM was communicated by the Comtesse DE VANDER, from her collection at Bayes-Water, in 1811.

We believe it has never been before figured, nor was it noticed by any botanical author, till Mr. HAWORTH described it in his Miscellanea Naturalia.

Native of the Cape of Good Hope. Introduced about the year 1794, by Mr. FRANCIS MASSON. Should be kept near the sloping lights of a good greenhouse, and watered very sparingly, and in the winter very seldom. Propagated by offsets.

TAB. 8463.

MESEMBRYANTHEMUM PEARSONII.

South Africa.

FICOIDEAE. Tribe MESEMBRYEAE.

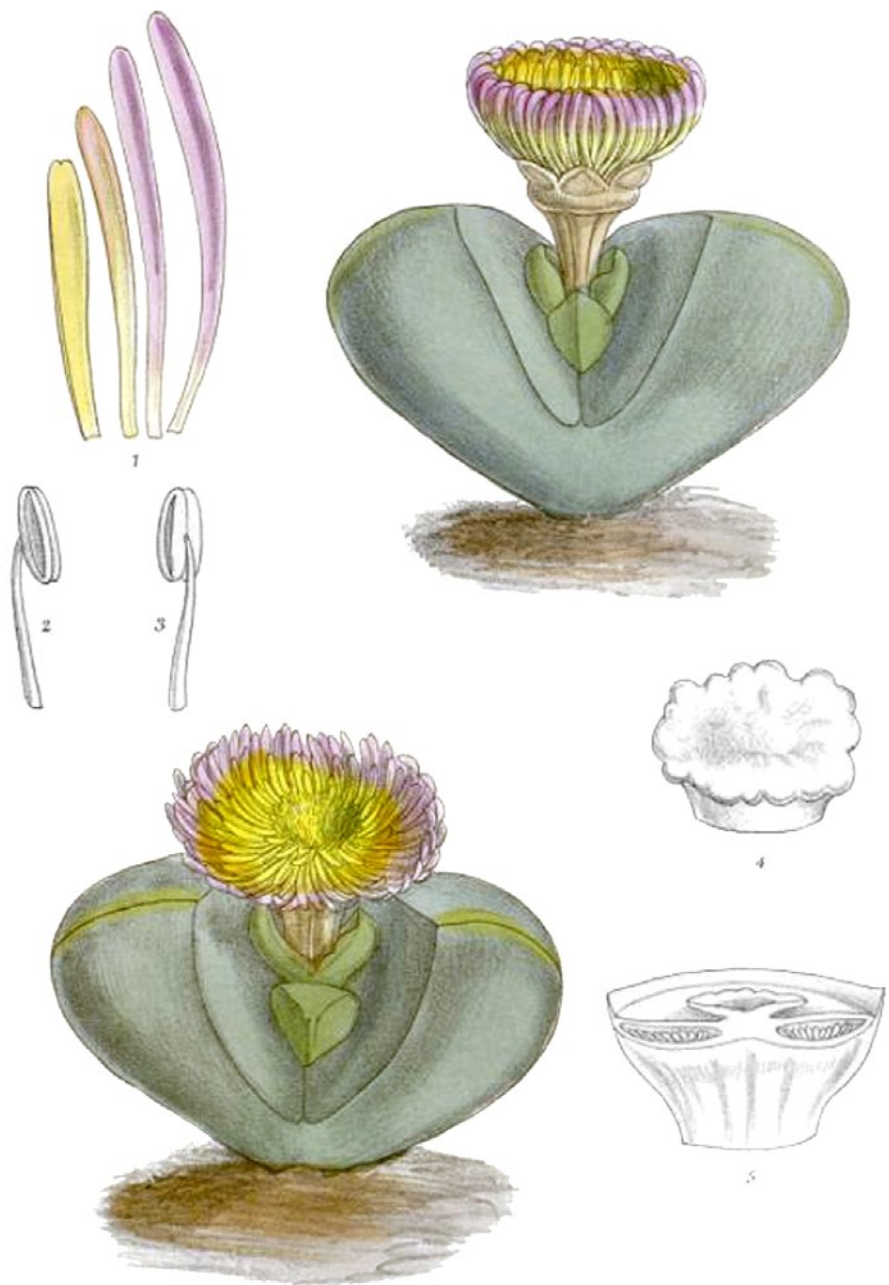
MESEMBRYANTHEMUM, Linn.; *Benth. et Hook. f. Gen. Plant.* vol. i. p. 853.

Mesembryanthemum Pearsonii, N. E. Brown in *Kew Bulletin*, 1912, p. 277; affinis *M. testiculari*, Ait., sed foliis multo majoribus, calyce supra folis exserto et floribus bicoloribus differt.

Herba perennis succulenta, 4-5 cm. alta. *Folia* 2, basi connata, patulo-adscendentia, 3.5-4 cm. longa, 4.5 cm. lata, 2.5 cm. rassa, facie interiora subplana, marginibus subacutis, subtus vel dorso subgibboso-convexa et leviter carinata, vertice leviter convexa, obtusissima, laevissima, glabra, alba, haud glauca. *Flos* solitarius, inter folia terminalis. *Pedunculus* exsertus, 2.5 cm. longus, validus, compressus, erectus, quadri-bracteatus, glaber. *Bracteae* inferiores 1.5 cm. longae, 0.8 cm. latae, 0.8 cm. crassae, subacute trigonae, obtusae, superiores minores, laeves, glabrae, albae. *Calyx* 1.3 cm. diametro, 6-lobus, glaber; lobi 3-4 mm. longi, 5 mm. lati, latissime ovati, obtusi. *Corolla* 3-3.2 cm. diametro, bicolor; petala 3-4-seriata; exteriora circiter 1.3 cm. longa, linearia, obtusa, pulchre purpurea; interiora gradatim minora, subochraceo-lutea, rubro-striata. *Stamina* numerosissima, patula, in anulum congesta; filamenta alba; antherae pallide luteae. *Styli* nulli; stigmata sessilia, magna, 5 mm. diametro, disciformia, obscure crenata.—N. E. BROWN.

The very distinct and striking *Mesembryanthemum* of which a figure is given here, was collected in 1910 by Mr. Pillans on the eastern slope of a ridge about twelve miles south of Nieuwerust, during the expedition to the Orange River led on behalf of the Percy Sladen Trustees by Professor Pearson. The plant was received at Kew from Professor Pearson, in whose honour it is named, in the spring of 1911, and flowered in a sunny frame during the summer of the same year, thereby allowing the preparation of our illustration. As a species it is most closely allied to *M. testiculare*, Ait., but the leaves are nearly twice as large and the calyx is exserted to about the level of the leaf-tips. In habit, size and form it also approaches *M. Bobusii*, Hook. f., but it differs very markedly in having smooth

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and very white, though not glaucous, leaves as well as in having more exserted flowers and in being without any style. In the absence of a style and in having a large sessile discoid stigma, *M. Pearsonii* differs from all other species known to Mr. Brown by their flowers, though it is not impossible that in *M. testiculare*, of which flowers have not been seen, the same arrangement may exist. The flowers of *M. Pearsonii* appear to expand at night or in the very early morning, becoming more or less closed during the day. In colour they are somewhat peculiar, two or three of the inner series of petals being of a dull yellow colour, more or less streaked with purple, the petals of the outermost series being entirely mauve-purple. In cultivation *M. Pearsonii* requires the conditions suited to *M. Bolusii*, *M. testiculare* and the other species which have very thick succulent leaves.

DESCRIPTION.—*Herb*, perennial, succulent, $1\frac{1}{2}$ –2 in. high. *Leaves* 2, connate at the base, between ascending and spreading, $1\frac{1}{4}$ – $1\frac{1}{2}$ in. long, $1\frac{3}{4}$ in. wide, 1 in. thick, almost flat on the inner face, somewhat gibbously convex and slightly keeled on the outer, the margin subacute, the apex slightly convex, quite blunt, everywhere quite smooth, glabrous, whitish but not glaucous. *Flower* solitary, terminal between the leaves; peduncle exserted, 1 in. long, stout, compressed, erect, 4-bracteate, glabrous; lower bracts $\frac{2}{3}$ in. long, $\frac{1}{3}$ in. wide and $\frac{1}{3}$ in. thick, somewhat sharply trigonous, obtuse; the upper bracts smaller, smooth, glabrous, whitish. Calyx $\frac{1}{2}$ in. wide, 6-lobed, glabrous; lobes $\frac{1}{8}$ – $\frac{1}{6}$ in. long, $\frac{1}{5}$ in. wide, very broadly ovate, obtuse. *Corolla* about $1\frac{1}{4}$ in. across; petals 3–4-seriate, the outer about $\frac{1}{2}$ in. long, linear, obtuse, mauve-purple; the inner progressively smaller, somewhat dull yellow streaked with purple. *Stamens* very many, spreading, clustered in a ring; filaments white; anthers pale yellow. *Style* 0; stigma large, discoid, obscurely crenate, $\frac{1}{5}$ in. across.

Fig. 1, petals; 2 and 3, stamens; 4, stigma; 5, ovary in vertical section:—*all enlarged*.



MS. del. J.N. Fitch lith.

Vincent Brooks Day & Son Ltd. imp.

L. Reeve & Co. London.

Tab. 8703.

MESEMBRYANTHEMUM PILANSII.

South Africa.

FICOIDEAE. Tribe MESEMBRYEAE.

MESEMBRYANTHEMUM, Linn.; *Benth. et Hook. f. Gen. Plant.* vol. i. p. 854,

Mesembryanthemum Pilanii, *Kensit in De Wild. Pl. Nov. Hort. Then.* vol. ii. p. 8, t. 57; species *M. lacero*, Haw., affinis sed petalis longe spathulatis in genere insignis.

Suffrutex ramosus 45–60 m. altus, omnino glaber, ramis ancipitibus rubescentibus. *Folia* 3–3.5 cm. longa, 6–9 mm. lata, 8–10 mm. crassa, patula, incurva, acute triquetra, carina saepe eroso-dentata vel interdum integra, apice mucronato-acuta, glauco-viridia. *Flores* solitariae, terminales. *Pedicelli* 1–1.3 cm. longi. *Calyx* 5-lobus, glauco-virens; tubus late obconicus, circiter 1.3–1.5 cm. diametro; lobi inaequales, 1–1.5 cm. longi, foliiformes, tribus late membranaceo-marginatis. *Corolla* 4–4.5 cm. diametro; petala biformia, exteriora numerosa, 3-seriata, alia patula, alia erecto-incurva, 1.5 cm. longa, longe spathulata, unguibus filiformibus albis et laminis elliptico-lanceolatis obtusis 2.5–3 mm. latis pulchre purpureis; interiora numerosa, breviora, supra stamina arcute incurva, filiformia, alba. *Stamina* numerosa, supra ovarium incurva, alba. *Ovarium* latum, depressum, apice concavum, 10-loculare; stigmata 10, minuta, conniventia. —N. E. BROWN.

The very distinct and somewhat peculiar *Mesembryanthemum* here figured was first met with in January, 1907, at Moutons Vley, near Piquetberg, Cape Colony, at an elevation of about 2,000 feet above sea-level. It has since been introduced to European collections by its discoverer, Mr. N. S. Pillans. The species has not yet flowered at Kew, and the material from which our plate has been prepared was obtained from a plant presented by Mr. Pillans to the Cambridge Botanic Garden in 1913 which flowered there for the first time in June, 1914. Mr. R. I. Lynch, to whom we are indebted for this material, informs us that the conditions suitable for other members of the genus meet the requirements of *M. Pilansii*. The nearest ally of *M. Pillansii* is *M. lacero*, Haw., which it much resembles in foliage, but the very remarkable spathulate petals at once distinguish our

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plant not only from *M. lacerum*, but from every other known member of the genus. The stamens and the minute stigmas are completely concealed within the dome formed by the closely contiguous incurved filiform inner petals.

DESCRIPTION.—*Undershrub*, $1\frac{1}{2}$ –2 ft. high, much branched, glabrous in all its parts; branches forked, reddish. *Leaves* glaucous-green, sharply triquetrous, $1\frac{1}{4}$ – $1\frac{1}{2}$ in. long, $\frac{1}{4}$ – $\frac{1}{2}$ in. wide, and $\frac{1}{3}$ – $\frac{2}{5}$ in. thick, spreading, then slightly incurved, the keel often erosely toothed, occasionally entire, the tip acute and slightly mucronate. *Flowers* solitary, terminal, pedicels $\frac{1}{3}$ – $\frac{1}{2}$ in. long. *Calyx* 5-lobed, greenish glaucous; tube wide obconic, from $\frac{1}{2}$ – $\frac{2}{3}$ across lobes unequal $\frac{2}{5}$ – $\frac{3}{5}$ in. long, resembling the leaves, three with, the others without broad membranous margins. *Corolla* $1\frac{1}{2}$ – $1\frac{3}{4}$ in. across; petals of two kind; the outer numerous, 3-seriate, some spreading, others erect or incurved, about $\frac{2}{3}$ long, long-spathulate with a white filiform claw and a purple elliptic-lanceolate blunt blade $\frac{1}{10}$ – $\frac{1}{8}$ in. wide; the inner also numerous but shorter, white, filiform, sharply incurved over the stamens. *Stamens* numerous, white, incurved over the ovary. *Ovary* broad and depressed with a concave apex, 10-locular; stigmas 10, minute, connivent.

TAB. 8703.—Fig. 1, section of a flower; 2, an outer petal; 3, inner petals and stamens; 4, an inner petal:—*all enlarged*.

MESEMBRYANTHEMUM POMERIDIANUM. GREAT
YELLOW-FLOWERED FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa linearia, *Capf.* carnofa, infera, polysperma.

Specific Character and Synonyms.

MESEMBRYANTHEMUM *pomeridianum*; foliis planiusculis lato-lanceolatis lævibus subciliatis distinctis, caule pedunculis germinibusque hirtis. *Sp. Pl.* 698. *Jacquin Icon. rar. v.* 2. 489. *Ait. Hort. Kew* 2. 194. *Martin Miller's Dict. n.* 66. *Linn. Dec. 1. tab.* 13.

MESEMBRYANTHEMUM *glabrum*; *And.* 57. an hujus varietas nana ?

This is certainly the MESEMBRYANTHEMUM *pomeridianum* of LINNÆUS, both accurately described and figured by the younger LINNÆUS. The MESEMBRYANTHEMUM *helianthoides* of the Kew Catalogue we should be tempted to put down as a mere variety of this; but observing that both sorts were introduced by Mr. MASSON from the Cape the same year, we are unwilling to suppose that, in so accurate a work, two species should be made of one when both could be compared together.

It has usually twelve stigmas and as many cells in the capsule; the peduncles and base of the calyx are always hairy; the segments of the calyx irregular, three of them flat and usually longer than the petals, and two rounded in the middle with membranaceous appendages at the base.

It is a tender annual; but if raised in a hot bed in April or May, the young plants may be set out in the open border by the middle of June, where they will thrive much better than when confined in a pot. They produce a great number of flowers, which when expanded, as they always are in the afternoon if the sun shine, are very showy; and as they seed freely, they are easily propagated.

Our figure was taken in the Botanic Garden at Brompton early in July last.—Introduced to the Royal Garden at Kew, by Mr. MASSON, 1774. *Ait. Kew.*



MESEMBRYANTHEMUM SPECTABILE. SHEWY
FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Calyx. 5-fidus. *Petala* numerosa, linearia, *Capsula* carnosa, infera, polyperma.

Specific Character.

MESEMBRYANTHEMUM *spectabile*, foliis perfoliatis, longissimis, glaucis, punctatis, integerrimis, triquetris, apice fimbriatis, caule lignoso adscendente. *Haworth. Mesemb. p. 385*



Pub. by W. Curtis del. & sculp. 1817

Mr. HAWORTH, in his observations on the genus *Mesembryanthemum*, gives to this species the name of *spectabile*, its blossoms being uncommonly shewy.

Of this tribe there are species whose flowers are superior in and brilliancy of colour to the present, whose leaves are more remarkable for the singularity of their form, yet in point of ornament, this, perhaps, is of all other the most desirable, as it continues to produce its fine large purple flowers during the whole of the summer, is of ready growth, and raised without difficulty from cuttings.

It has been introduced to this country within these few years, most probably from the Cape, by Mr. MASSON.

To Mr. HAWORTH's description of the foliage we have only, to add, that the leaves sometimes throw out internally a tooth near their extremities, as is shewn in our figure.

TAB. 6299.

MESEMBRYANTHEMUM SUTHERLANDII.

Native of Natal.

Nat. Ord. FICOIDEÆ:—Tribe MESEMBRYEÆ.

Genus MESEMBRYANTHEMIUM, *Linn. (Benth. et Hook. f. Gen. Plant. vol. i. p. 53.)*

MESEMBRYANTHEMUM *Sutherlandii*; herbaceum, perenne, ramosum, robustum, ramis annuis adscendentibus cylindraceis hispidulis, foliis oppositis patenti-recurvis basi subconnatis, elongato lingulatis minute papulosis supra medium subdilatatis acutis superne scaberulis marginibus subrecurvis ciliolatis crasse carnosius supra paulo-concavis subtus costam rotundatam versus tumidis, scapo 5-floro 1-2-pollicari robusto hispidulo, flore 2-2½ poll. diamet. calyce tereti tubo turbinato, sepalis inæqualibus subcylindraceis patenti-recurvis obtusis scaberulis 2 brevioribus membranaceo-marginatis, petalis roseo-pupureis anguste linearibus obtusis, staminibus flavis multi-seriatis exterioribus anantheris, stigmatibus 5 ovato-lanceolatis acuminatis grosse papillosis seta terminatis.

It is not without hesitation that I propose a new South African species of the immense genus *Mesembryanthemum*, of which some 290 species are already contained in Harvey and Sonders' 'Flora Capensis.' I have, however, searched in vain amongst those described in that work for any which accords with this, which moreover comes from a district beyond the range of the species hitherto discovered. Of the sixty-five sections under which the S. African species are classified, there is none with which it quite agrees, though it is probably referable to one of those belonging to the great group of "Papulosæ," the surfaces of whose leaves and branches are covered with minute glistening cellular papillæ. It may, perhaps, be safely referred to a reformed section, "Platyphylla," of Haworth, from which it differs in the root being perennial instead of annual or biennial.

M. Sutherlandii was sent to the Royal Gardens by Dr. Sutherland, Surveyor-General of the colony of Natal, in 1870, and has flowered annually in the summer months since 1872.

DESCR. Minutely papulose and clothed (except the broad tumid middle part of the under surface of the leaves) with short rigid hairs. Root perennial. Stem branching from
JUNE 1ST, 1877.

the base; branches annual, diffuse or suberect, cylindric, three to six inches high, green. *Leaves* opposite, decussate, two to three inches long, spreading and recurved, slightly connate by their sessile bases, oblanceolate or linear-oblong and dilated beyond the middle, acute, deep green, upper surface slightly convex, channelled towards the base, under tumid and rounded towards the keel; margins acute, slightly recurved. *Peduncles* subterminal, three to four inches long, stout, terete, green, gradually dilated into the almost hemispheric bristly terete calyx-tube. *Calyx-lobes* 5, unequal, spreading and recurved, cylindric, obtuse, papillose and scabrid, green, two smaller than the others and having broad membranous margins. *Corolla* two to two and a half inches in diameter. *Petals* very numerous, pale bright-purple, linear, very narrow, obtuse. *Stamens* very numerous in many series, the outer without anthers. *Carpels* 5, globose; stigmas large, ovoid, acuminate, terminating in hair-like points, densely clothed with large papillæ on the inner surface and margins.

J. D. H.

Fig. 1, Apex of peduncle, carpels, and stigma:—*enlarged*.

TAB. 8595 A.

MESEMBRYANTHEMUM THECATUM.

South Africa.

FICOIDAE. Tribe MESEMBRYEAE.

MESEMBRYANTHEMUM, Linn.; Benth. et Hook. f. Gen. Plant. vol. i. p. 858.

MESEMBRYANTHEMUM thecatum, N. E. Br.; species nova *M. fraterno*, N. E. Br., affinis, sed plantulis coerulesco-viridibus punctis minoribus et minus conspicuis floribus roseo-purpureis et staminibus paucioribus differt.

Herba parva, acaulis, succulenta, caespitosa, glabra. Folia in corpuscula obconica, apice leviter convexo-truncato, 7–10 mm. diametro fusa, coerulesco-viridis, punctis sordide viridibus conspersa, fissura centrali 3 mm. longa, pedunculos et ovaria includentia. Calyx tubulosus, apice 4-lobus, membranaceus, albidus; lobi ovati vel obovati, obtusi. Corolla gamopetala, 1.2–1.5 cm. dimittens, roseo-purpurea, luteo-oculata; petala difformis, exteriora 12–16, 2-seriate, 6–8 mm. longa, 1.5–2 mm. lata, cuneato-lineariter, apice obtusa vel denticulata, roseo-purpurea; interiora 12–16, brevissima lineariter, acuminata, lutea interdum apice roseo-purpurea. Stamina 8, 2-seriate, medium tubum corollae attingentia, lutea. Stylus 8 m. 1.5–2 mm. longus, staminibus brevior, apice 4-lobus, viridis.—N. E. BROWN.

The pleasing little tiesembryant heum here for the first time described belongs to a group of species in that sprg e oenus characterised by each branch or divisio of Sneplantr bearing at any one time bu oneo pair of tama which are united for the whole or for part of their extent into one mass, technically termed a "corpusculum." When a fresh pair of leaves, united in aniew corpusculum, is being formed, the pair of the previous growth gradually shrivel to a papery consistence through which the new growth bursts. In the case of *M. thecaum*, depicted in the upper half of our plate, the two leaves of each succeeding growth are united throughout and completely envelop the peduncle and ovary, leaving at their apex a mere fissure from which the actual flower protrudes. The species is one of the novelties discovered by Professor Pearson, Director of the National Botanic Garden of South Africa at Kirstenbosch near Cape Town, in the course of his very fruitful journey to the Orange River undertaken in 1910-11 under the auspices and with the

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M. S. Aet. J. N. P. et al.

Vincent, Brown, Day & Son Ltd 1915

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assistance of the Percy Sladen Trust. It was met with growing on dry ridges south of Bakhuis in the Van Rhynsdorp Division of Cape Colony, and the plant from which our figure has been prepared formed part of a very valuable collection of succulents collected by Professor Pearson and his fellow-traveller on the expedition, Mr. N. S. Pillans, which was presented to Kew in 1911. It has thriven well and flowered freely under the conditions suitable for Mesembryanthemums generally. Its flowers open in the morning and close at night, and are devoid of scent; each flower lasts from four to six days.

DESCRIPTION.—*Herb*, small, stemless, succulent, tufted, glabrous. *Leaves* consolidated in obconic bodies, somewhat convex-truncate at the tip, about $\frac{1}{3}$ in. thick, bluish-green with dull green markings, central chink $\frac{1}{8}$ in. long, concealing the peduncle and the ovary. *Calyx* tubular, 4-lobed at the tip, membranous, whitish; lobes ovate or obovate obtuse. *Corolla* gamopetalous, $\frac{1}{2}$ – $\frac{2}{3}$ in. across, rose-purple with a yellow eye; petals of two types, the outer 12–16 are 2-seriate, $\frac{1}{4}$ – $\frac{1}{3}$ in. long, $\frac{1}{12}$ in. or less in width, linear-cuneate with blunt or denticulate tips, rose-purple throughout, the inner 12–16 are very short, linear, acuminate, yellow, sometimes rose-purple at the tips. *Stamens* 8, 2-seriate, reaching the middle of the corolla-tube, yellow. *Style* $\frac{1}{2}$ in. long or less, shorter than stamens, 4-lobed at the tip, green.

Fig. 1. vertical section through a flower and the upper part of a plant; 2, outer and inner petals; 3, style and stigmas:—*all enlarged*.

TAB. 8595 B.

MESEMBRYANTHEMUM STYLOSUM.

South Africa.

FICOIDAE. Tribe MESEMBRYEAE.

MESEMBRYANTHEMUM, Linn.; Benth. et Hook. f. Gen. Plant. vol. i. p. 858.

Mesembryanthemum stylosum, N. E. Br.; species nova *M. bilobo*, Marl., affinis sed major, lobis quam corpuscula longioribus et stylo staminibus longiori differt.

Herba parva, acaulis, succulenta, laxae caespitosa glabra. *Folia* in corpuscula oblonga, apice 2-loba connata, 2·5–5 cm. alta, 1·2–1·5 cm. lata, 0·8–2 cm. crassa, glauco-viridia, epunctata, lobi ad 2 cm. longi, obtusi, facie interiore plani, dorso rotundati vel obscure carinati, compressi, saepe obliqui; ovarium inclusum. *Calyx* tubulosus, apice 4–6-lobus, inclusus vel ex parte exsertus; lobi 3–6 mm. longi, 1·5–2·5 mm. lati, oblongi, obtusi vel subacuti, submembranacei vel virides. *Corolla* gamopetala 2–3·5 cm. diamantiens, lutea; petala 45–56, 3–4-seriata, 1–1·8 cm. longa, 1–1·5 mm. lata, linearis, obtusa. *Stamina* numerosa, breviter exserta, pallide lutea. *Stylus* apice 5–6-lobus; lobi subulati, rubro-aurantiaci, ultra stamina longe exserti.—N. E. BROWN.

The interesting *Mesembryanthemum* which occupies the lower half of our plate is another of the fruits of the Percy Sladen Memorial Expedition to the Orange River, led in 1910–11 by Professor Pearson of Cape Town. Like its companion this species, *M. stylosum*, is a hitherto uncharacterised one, belonging to the same natural group, though in this instance the welding of the two leaves forming each corpusculum is much less complete and the resultant bodies are deeply 2-lobed at the apex. *M. stylosum* was collected on the plains between Chubiessis and Stinkfontein in Little Namaqualand, and the plant from which our illustration has been prepared formed part of the same munificent accession to the succulent collection at Kew for which the institution is indebted to the Percy Sladen Trust and to the travellers who, thanks to their assistance, were enabled to investigate so thoroughly the vegetation of a considerable portion of western Cape Colony. The flowers in *M. stylosum* are bright yellow; they open in the day time and only in bright sunshine. They last for five to six days and are

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without odour. The species thrives well under the conditions suitable for fleshy-leaved Mesembryanthemums, of which there is at Kew a large collection. They are most successfully cultivated in a sunny greenhouse or frame, except during summer, when they are placed in the open air. They enjoy a fair allowance of water at the root whilst in growth, but require little or none during winter when they are at rest.

DESCRIPTION.—*Herb*, small, stemless, succulent, loosely tufted, glabrous. *Leaves* fused below in oblong bodies with 2-lobed apices, 1–2 in. long, $\frac{1}{2}$ – $\frac{2}{3}$ in. wide, $\frac{1}{3}$ – $\frac{3}{4}$ in. thick, glaucous-green, unblotched; lobes up to $\frac{3}{4}$ in. long, obtuse, flat on the ventral, rounded or indistinctly keeled on the dorsal face, compressed, often oblique; ovary enveloped by the base of the mass. *Calyx* tubular, 4–6-lobed at the tip, included or partly exserted; lobes $\frac{1}{8}$ – $\frac{1}{4}$ in. long up to $\frac{1}{10}$ in. wide, oblong, obtuse or subacute, somewhat membranous or green. *Corolla* gamopetalous, $\frac{3}{4}$ – $1\frac{1}{3}$ in. across, yellow; petals 45–56, 3–4-seriate, $\frac{1}{3}$ – $\frac{3}{4}$ in. long, $\frac{1}{16}$ in. wide, linear, obtuse. *Stamens* many, shortly exserted, pale yellow. *Style* 5–6-lobed at the tip; lobes subulate, reddish-orange, exserted far beyond the stamens.

Fig. 1, a stamen; 2. style and stigma:—*all enlarged*.

MESEMBRYANTHEMUM TRANSVAALENSE.

South Africa.

FICOIDEAE. Tribe MESBEMBRYEAE.

MIESEMBRYANTHEMUM, *Lin.; Benth. et Hook. f. Gen. Plant.* vol. . p. 853.

MESEMBRYANTHEMUM (§ Aloidea) **transvaalense**, *Rolfe*; species nova *M. albi-punctato*, Haw., affinis, sed foliis patentibus vel subreflexi, floribus majoribus, petalis rubro-lineatis et stylis clavatis differt.

Herba parva, acaulis. Folia 8–11, patentia vel subreflexa, lineari-oblonga, subacuta, integra, crassa, nitida, viridia, crebre et minute verruculosa, 2·5–4 cm. longa, 0·5–0·6 cm. lata, 0·4–0·6 cm. crassa, supra planiuscula vel subconcava, subtus convexa, vix carinata, apice incurvula, triquet-ro-compressa. *Flores* subsessiles, expansi 2·5–3 cm. diametru. *Calyx* late campanulatus; lobi late deltoideo-ovati, acuti, 0·6–0·7 cm. longi, minute verruculosi, margine membranacei. *Petala* numerosissima, patentia vel subreflexa, circiter 1 cm. longa, lutea, medio rubro-lineata. *Stamina* numerosa, erecta; filamenta albidia; antherae flavidae. *Styli* 10, erecti, apice patentes, subelavati.—R. A. ROLFE.

For the introduction to our succulent collections of the *Mesembryanthemum* here described horticulture is indebted to the officers of the Department of Agriculture of the Transvaal, by whom it was presented to Kew in 1910. It is a native of the Transvaal, where it was originally obtained by Mr. J. Burtt Davy in the Smitskraal-Boshof district. In its native habitat it is met with growing on a brown loam; under cultivation at Kew it has thriven well under the conditions suitable for other South African species. It flowered for the first time in June, 1915, and proved then to be a hitherto uncharacterized species. A member of the *Aloidea* section of its genus, *M. transvaalense* calls to mind *M. vittatum*, N. E. Br., and *M. rubro-lineatum*, N. E. Br., two species in which the petals are similarly marked with a central red line. In all other characters, however, it is more nearly allied to *M. albipunctatum*, Haw., a species introduced many years ago from some locality in South Africa which has not been definitely recorded, though it is known that the plant was found not far

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from the coast. From *M. albipunctatum*, however, the species now figured is readily distinguished by its more spreading leaves, its larger, differently coloured flowers and its more distinctly clavate styles.

DESCRIPTION.—*Herb*, small and stemless. *Leaves* 8–11, spreading or somewhat reflexed, linear-oblong, sub-acute, entire, thick, shining green, closely and finely warted, $1-1\frac{3}{4}$ in. long, $\frac{1}{5}-\frac{1}{4}$ in. wide, $\frac{1}{6}-\frac{1}{5}$ in. thick, flattish or somewhat concave above, convex, but hardly keeled beneath, slightly incurved at the tip, compressed triangular. *Flowers* nearly sessile, $1-1\frac{1}{4}$ in. across. *Calyx* wide campanulate; lobes wide deltoid-ovate, acute, about $\frac{1}{4}$ in. long, finely warted, margin membranous. *Petals* very many, spreading or somewhat reflexed, about $\frac{1}{3}$ in. long, yellow, with a red central line. *Stamens* numerous, erect; filaments whitish; anthers yellowish. *Styles* 10, erect, spreading and somewhat clavate at the tip.

Fig. 1, apex of leaf; 2 and 3, stamens; 4, apex of ovary, with styles:—*all enlarged*.

TAB. 8674B.

MESEMBRYANTHEMUM TUBERCULOSUM.

South Africa.

FICOIDEAE. Tribe MESEMBRYEAE.

MESEMBRYANTHEMUM, *Linn.*; *Benth. et Hook. f. Gen. Plant.* vol. i. p. 853.

Mesembryanthemum (§ Ringentia) **tuberosum**, *Rolfe*; species nova a *M. tigrino*, Haw., foliorum facie supero tuberculis obtusis albidulis instructo marginibus sparse spinosis et stylis basi connatis apice valde recurvis dif-
fert.

Herba parva, acaulis. Folia 6–8, subpatentia, deltoideo-ovata, subobtusa, viridia, 2–2.5 cm. longa, 1.5–2 cm. lata, 1 cm. crassa, supra subconvexa, tuberculis obtusis albidulis instructa, subtus convexa, minute albido-punctata, apice triqueto-compressa. Flores subsessiles, expansi circiter 4 cm. diametro. Calyx campanulatus; lobi oblongi, 1 cm. longi. Petala numerosissima, patentia, lutea, 1.3–1.5 cm. longa. Styli 5, basi connati, apice ad recurvi, papillosoi.—R. A. ROLFE.

The attractive *Mesembryanthemum* figured on the lower portion of our plate is one for whose introduction horticulture is indebted to Mr. N. S. Pillans of Cape Town, by whom it was communicated some ten years ago, along with several other species, to Mr. G. Elisha, Canonbury Park Road North, London. The example of the species now described, which was labelled as being from Namaqualand, arrived in a condition which rendered cultivation impossible. Two seed capsules, however, were still attached to the plant; these were removed and kept until the following spring, when the seeds were separated and sown in a small pan half filled with soil and lightly covered with a layer of fine earth and sand. The pan, covered with a sheet of glass, was placed in a sunny spot in a greenhouse, and by the end of the summer five small but vigorous plants were raised. The appearance of the plants called to mind *M. tigrinum*, Haw., but from the outset it was realised that they could hardly be that species, the leaves being of a much darker green. The appearance on the later-formed leaves of the small raised points, which became more pronounced during the following season, made it certain that this Namaqua

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MESEMBRYANTHEMUM TRICOLOR. PURPLE-
EYED FIG MARYGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa, linearia, basi cohærentia, *Caps.* carnosa, infera, polysperma.

Specific Character and synonyms.

MESEMBRYANTHEMUM *tricolor*; subcaulescens, foliis punctatis lineari-spathulatis connatis subtus convexis supra sulco exaratis. *Willd. Enum.* 530.

MESEMBRYANTHEMUM *tricolor*; foliis amplexicaulibus distinctis punctatis lineari-spathulatis subtus convexis superne sulco exaratis, caule brevissimo herbaceo. *Willd. Hort. Berol. v. 1. p. 22. t. 22.*

OBS. Species a *tricoloro* Haworthii omnino distincta.



A pretty little annual species altogether different from the *tricolorum* of HAWORTH and AITON. It is easily propagated by seeds, which it produces freely; these should be sown in the spring on a hot bed, and treated as the ice plant and other annual species,

The first account we have of this plant is in WILLDENOW'S Hortus Berolinensis. It is supposed to be a native of the Cape of Good Hope. Communicated by Mr. ANDERSON from the Chelsea Garden, who received the seeds from Mr. OTTO, of the Royal Garden in Berlin. Mr. ANDERSON informs us that there are two varieties of this species cultivated at Kew, one With paler and the other with deeper coloured flowers.

plant was not *M. tigrinum*, but no suggestion as to its identity could be offered. With a view to its ultimate determination one of the five plants was presented to the Kew collection, where it has thriven well under the conditions suitable for other members of the genus. This plant flowered for the first time in October, 1913, and forms the subject of our illustration. It proves to be a hitherto undescribed member of the *Ringentia* section, nearest, as was originally surmised, to *M. tigrinum*. The leaves, however, besides being of a darker green, are less strongly marginally toothed, while the upper surface, instead of being smooth, is tuberculate, each tubercle having a white central spot. The flowers in *M. tuberculosum* are larger, and the styles are united below in a column, their upper free portion being strongly recurved, whereas in *M. tigrinum* the styles are free and nearly erect throughout.

DESCRIPTION.—*Herb*, small and stemless. *Leaves* 6–8, somewhat spreading, deltoid-ovate, rather blunt, green, $\frac{3}{4}$ –1 in. long, $\frac{2}{3}$ – $\frac{3}{4}$ in. wide, over $\frac{1}{3}$ in. thick, somewhat convex above and beset with blunt, whitish tubercles, convex beneath and finely white-punctate, tip compressed-triangular. *Flowers* nearly sessile, $1\frac{1}{2}$ in. across. *Calyx* campanulate; lobes oblong, over $\frac{1}{3}$ in. long. *Petals* very many, spreading, yellow, $\frac{1}{2}$ – $\frac{2}{3}$ in. long. *Styles* 5, connate at the base, much recurved above, papillose.

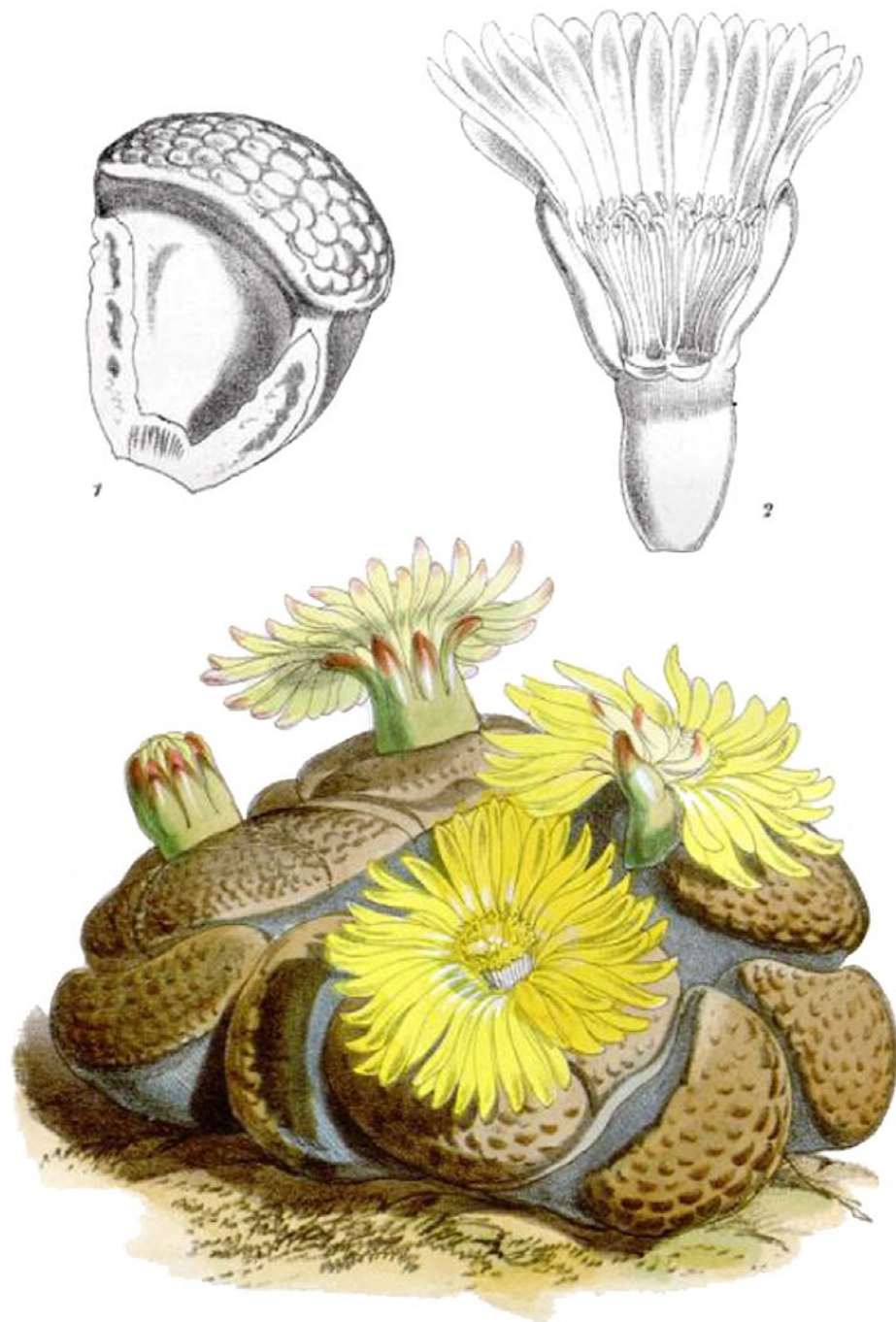
Figs. 5 and 6, anthers; 7, style and stigma:—*all enlarged*.

TAB. 6077.

MESEMBRYANTHEMUM TRUNCATELLUM.

Native of Soouth Africa.

Nat. Ord. FICOIDEÆ.—Tribe MESEMBRYEÆ.

Genus MESEMBRYANTHEMUM, Linn.; (*Benth. & Hook. f. Gen. Plant.*, vol. i. p. 853).

MESEMBRYANTHEMUM *truncatellum*; obconicum, 1–3 poll. diametro, acaule, glaberrimum, glaucum, crassum, pallide viride, foliis ad 4 decussatim oppositis latissime cuneatis basi connatis appressis apicibus dilatatis, latissime truncatis, vertice lunatis convexis pallide bruneis depresso-tuberculatis colore saturatiore irroratis, basi vestigiis membranaceis fugaceis foliorum vetustorum vaginatis, floribus majusculis $1\frac{1}{2}$ poll. diametro solitariis sessilibus, ovario inter folia 2 summa compresso, calyce 5-6-fido segmentis obtusis, petalis 2-serialibus numerosissimis anguste linearibus stramineis, staminibus perplurimis segmentis calycinis æquilongis, stylis ad 5 gracilibus, apicibus incurvis.

MESEMBRYANTHEMUM *truncatellum*, Haworth *Miscell. Nat.*, p. 22; *Ait. Hort. Kew, Ed. 2*, vol. iii. p. 213; *Haw. Synops. Plant. Succ.*, 203; *DC. Prodr.*, vol. iii. p. 417.; *Harv. & Sond. Fl. Cap.*, vol. ii. p. 392.

Though differing in some respects from the published description of *Mes. truncatellum*, I have little hesitation in referring the vegetable oddity here figured to that plant. Thus Harvey, on what authority is not stated, describes it as only half an inch in size, whereas Haworth (the author of the species) calls it the “great dotted Dumplin,” which implies that it is the largest of its allies, of which the smallest, *M. minutum*, is fully half an inch in size. Again, Haworth, in his original description (*Misc. Nat.*), describes the ovary as never extruded beyond the surface of the plant, as in our specimen; but in his Synopsis he describes it as exserted, and in this he is followed by De Candolle and Harvey. Lastly, the calyx is said to be 5-fid in the original description, and in De Candolle’s Prodrusus, and Harvey’s Flora; but 4-fid in the Hortus Kewensis: in our plant it is 6-fid.

JANUARY 1ST, 1874.

M. truncatellum was introduced into Kew in 1795, by F. Masson, one of the travellers attached to the establishment, and is described as flowering in November; our plant was sent by Principal MacOwan, of Gill College, Somerset East, and flowered in October 1873; it is a very rare species, was unknown to the Prince Salm Dyck, and is hence not included in his magnificent work; it has never before been figured.

DESCR. Plant forming tufts of pale glaucous green, obconic, truncate, translucent fleshy masses, one to three inches in diameter, with a flat or convex rather tubercled brown surface; each branch on plant, consisting of four leaves in opposite pairs, placed cross-wise. *Leaves* very fleshy, broadly cuneate, connate to above the middle; back convex; face convex; crown lunate, brown, mottled, convex; the first formed fleshy leaves, after developing another pair between them, shrink into a mere membranous pellicle that sheaths the base of the younger pair. *Flower* solitary, sessile, one and a half inches in diameter. *Calyx-tube* sunk and tightly-wedged between the two uppermost leaves; limb 5–6-cleft, lobes obtuse, tinged purple. *Petals* in two series, very numerous, straw-coloured. *Stamens* very numerous, anthers yellow. *Styles* 5, slender, tips uncurved.—*J. D. H.*

Fig. 1, Leaf; 2, flower with two sepals, and petals of same side removed:—*both magnified.*

MESMBRYANTHEMUM VIRIDIFLORUM.
GREEN-FLOWERED FIG-MARIGOLD.

Class and Order.

ICOSANDRIA PENTAGYNIA.

Generic Character.

Cal. 5-fidus. *Petala* numerosa, linearia, *Caps.* carnosa, infera, polysperma.

Specific Character and synonyms.

MESEMBRYANTHEMUM *viridiflorum* foliis femicylindraceis papuloso-pilosis, calycibus quinquefidis hirsutis. *Ait. Kew. v. 2. p. 196. Haworth Mesemb. p. 199. Syst. Nat, ed. Gmel. p. 848.*



Pub. by W. Curtis Sc. Geo. Crescent Feb. 1. 1796.

Of the seventy species of Mesembryanthemum described in the *Hortus Kewensis*, this is the only one with green flowers.

Mr. MASSON introduced it from the Cape in 1774.

The flowers are not only remarkable for their colour, but extreme fineness of the florets; they begin to come forth in July, and continue to be produced till the end of September; the plant is easily increased by cuttings, is of ready growth, and blows freely.

In Mr. HAWORTH's *Observations on the Genus Mesembryanthemum*, lately published, there is a very ample description of it to which we refer such of our readers as wish for more minute information respecting it.

STAPELIA ASTERIAS. STAR-FISH
STAPELIA.

Class and Order.

PENTANDRIA DIGYNIA.

Generic Character.

Contorta. *Nectarium* duplici stellulâ tegente genitalia.

Specific Character and Synonyms.

STAPELIA *Asterias*; ramis pluribus erectis tetragonis dentatis, dentibus brevibus erectis, corolla magna quinquefida; laciniis lanceolatis margine revolutis ciliatis. *Masson. Stap. n. 14. t. 14.*

STAPELIA *Asterias*; corollis quinquefidis; laciniis ovato-acuminatis, margine revolutis, villosis, pedunculis longitudine corollæ, ramis erectis tetragonis attenuatis basi floriferis. *Spec. Plant. edit. Willdenow, 1. p. 1280.*

The flower of this very distinct species of *Stapelia* has a highly offensive smell, appearing to us, although we are not certain that the eye might not impose on the imagination, to approach to the stink of a putrid star-fish, as well as to resemble it in form. The specific character given by WILLDENOW is not so accurate as that of MASSON. In many respects it agrees with *hirsuta*, but differs in the shape of the corolla, in the want of hairs in the centre of the flower, and in the colours, which, though nearly the same, are reversed, the ground of the petal in the *hirsuta* being a pale yellow, and the transverse veins a dull purple.

We are obliged to Mr. LODDIGES, of Hackney, for the specimen from which our drawing was made, who imported it from the Cape of Good Hope, as he did likewise the one we before published, from Mr. WOODFORD's collection, under the name of *STAPELIA lentiginosa*, and which we by mistake derived from the Royal Garden at Kew. All the *Stapeliae* are proper inhabitants of the dry stove, but succeed very well in the bark stove when placed on a shelf very near the window.



STAPELIA BARBATA. BEARDED STAPELIA.

N2401

Class and Order.

PENTANDRIA MONOGYNIA.

Generic Character.

Asclepiadea. *Nect.* duplici stellula tegente genitalia.

Specific Character and Synonyms.

Sect. I. *Corollis decemdentatis; alis nullis; rostris gibbosis; ligulis coalitis in scutum humile.* (Heuriæ Brown)

A. *Fauce simplici*

STAPELIA *barbata*; corollis campanulatis intus punctatis, foris impunctatis, dentibus majoribus cuspidatis, ramis strictis tetragonis. *Jacq. Stap.*

STAPELIA *barbata*; corollis decemdentatis: laciniis majoribus lanceolatis acuminatis scabris clavato-barbatis, pedunculis corolla brevioribus, ramis subtetragonis erectis basi floriferis. *Willd. Sp. Pl.* 1 p. 1293. *Hort. Kew. ed. alt.* 2 p. 95

STAPELIA *barbata*; ramis pluribus tetragonis pentagonisque confertis suberectis, dentibus ramorum acutis subpatentibus, corolla campanulata decemfida, laciniis acutis subpatentibus. *Masson Stap. p.* 11 t. 7.

HEURNIA *barbata*; corolla campanulata, fauce subclausa, setis clavatis rufis: ligulis oblongis rhombeis retusis, staminibus subulatis undatim subuncatis. *Haworth Succul. p.* 31. *Schultes Syst. Veg.* 6. p. 8.



We have before given four species of this division, which rank under the genus HEURNIA of Brown; No. 506, *lentiginosa*; No. 1662, *reticulata*; No. 1227, *campanulata*; and No. 1661, *clavigera*; the last is erroneously given under the name of *campanulata*. The two last mentioned species and our present one *barbata* are so very nearly related, that

that though recorded as distinct by the best authority JACQUIN, HAWORTH, and in the Hortus Kewensis, may be thought by some to be only varieties of one species.

The flowers of *STAPELIA barbata*, smell less offensively than most of the other species; the corolla is smooth, and of nearly a uniform colour on the outside, except that the tube is obscurely streaked, but within the limb is roughened by raised spots, and by scattered glandular somewhat clubbed hairs. The branches are straight, have sometimes four, more frequently five, and now then six angles.

Native of the Cape of Good Hope, whence it was introduced into this country by Mr. FRANCIS MASSON in 1795. Flowers most part of the summer. Communicated by N. S. HODSON, Esq. from the Botanic Garden at Bury St. Edmunds.

STAPÉLIA CACTIFÓRMIS. CACTUS-LIKE

STAPELIA.

Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—ASCLEPIADEÆ.)

Generic Character.

Calyx quinquepartitus. *Corolla* rotata, quinquefida, car-nosa. *Gynostegium* sæpius exsertum. *Corona staminea* du-plex; exterior foliolis v. laciniis integris v. partitis, interior corniculiformibus simplicibus v. bifidis. *Antheræ* apice sim-plices. *Massa pollinis* erectæ ventricosæ, margine hinc pel-lucido. *Stigma* muticum. *Folliculi* subcylindracei, læves, erecti. *Semina* comosa.—Plantæ *Capenses*, carnosæ, ramosæ, ramis aphyllis sæpius tetragonis angulis dentatis, floribus ut plurimum speciosis atro-sanguineo-guttatis vel marmoratis et tunc nonnunquam odore nauseoso, stercorario. D C.

Specific Name and Character.

STAPELIA (§. PODANTHES?) *cactiformis*; caule cylindraceo sim-plici undique mammillis areolato, mammillis inferioribus majoribus transversim oblongis superioribus mi-noribus subrotundis angulatis medio puncto depresso, floribus ex apice caulis subsessilibus aggregatis parvis, corollæ subrotatæ laciniis triangulari-acutis, coronæ stamineæ serie externa 5-fida dentibus interjectis lo-bis bifidis laciniis divaricatis.

One of the most remarkable of a very remarkable Genus, respecting which it is to be regretted that many species, formerly known to our gardens, are lost, and scarcely any new ones have been received to take their place. Among the



the latter, however, may be reckoned the curious *STAPELIA Gordoni* of MASSON, (*SCYTANTHUS Gordoni*, HOOK. Ic. Plant. tab. 625) which were detected by Mr. BURKE on the Orange River, and other places in South Africa, and sent to his employer, the Earl of DERBY, at Knowsley, together with the subject of the present plate, lately received among a collection of plants from Little Namaqua-land, from Mr. ZEYHER. It flowered in the Royal Botanic Gardens of Kew, in August, 1844.

DESCR. The *stem*, or, in other words, the entire plant, has more the appearance of a *MAMMILLARIA* (among *CACTACEÆ*), or some succulent South African *EUPHORBIA*, than of a *STAPELIA*, and is obovato-cylindrical, in the present instance about five inches and a-half high, and two inches broad, of a glaucous-green color, externally even mammillate; *mammillæ*, in the lower and older part of the stem transversal, oblong; above, in the younger portion, nearly rotundate and smaller, somewhat angular, as it were, by pressure: all of them prominent and furnished with a small central depression. *Flowers* small, aggregate on the summit of the stem, nearly sessile, with transverse, red bands and spots. *Calyx* deeply five-toothed. *Corolla* nearly rotate, but approaching to campanulate, minutely puckered on the surface; the five segments triangular, acute, spreading. The general form of the flower and the structure of the staminal crown in many respects approach those of *PODANTHES*: but there are differences, and the habit of the plant is quite at variance with that section or subgenus of *STAPELIA*. The exterior staminal corona has five principal divisions, with a short intervening tooth; and each principal division is forked, or deeply cleft, with the segments spreading: the horns, or segments of the interior, are linear-oblong, rather short, and incurved upon the *gynostegium*.

Fig. 1. Flower. 2. Staminal Crown:—*magnified*.

STAPELIA CAMPANULATA. BELL-FLOWERED
STAPELIA.

Class and Order.

PENTANDRIA DIGYNIA.

Generic Character.

Contorta. *Nectarium* duplici stellula tegente genitalia.

Specific Character and Synonymss.

STAPELIA *campanulata*; corollis decem-dentatis, infundibuliformibus: limbo verrucoso: tubo barbato: nectarii laciniis obtusissimis apice crenatis.

STAPELIA *campanulata*; ramis pluribus simplicibus erectis tetragonis dentatis, dentibus patentibus acutis, corolla decemfida campanulata scabra, tubo barbato. *Masson Stap. p. 11. n. 6. t. 6.*

STAPELIA *campanulata*. *Willd. Spec. Pl. 1293. Martyn. Mill. Dict. n. 43.*



The *branches* of this species are simple erect four-sided, with teeth patent and sharp-pointed. The *peduncles* issue from near the base, and bear sometimes two or three flowers in succession. The segments of the *calyx* are linear, and project beyond the base of the corolla. *Corolla* funnel-shaped: *limb* divided to five broad triangular sharp-pointed laciniae with a much smaller one between each, sulphur-coloured with raised purple irregular spots: *tube* nearly cylindrical, clothed within with glandular hairs. The *nectarium* lies flat at the very bottom of the tube, is five-parted: laciniae very obtuse, scalloped at the point, with five simple horn-shaped appendages rising above the stigma and bent back at the point. Native of the dry country at the Cape of Good Hope. Flowers in July and August.

Our drawing was taken at the copious collection of the late JOHN WAILKER, Esq. at Stockwell; but the description from a flowering plant sent us last month by Messrs. LODDIGES.

TAB. 6082.

STAPELIA CORDEROYI.

Native of South Africa.

Nat. Ord. ASCLEPIADEÆ.—Tribe STAPELIEÆ.

Genus STAPELIA, Linn.; (*Dcaisne in DC. Prodr.*, vol. viii. p. 652).

W. Fitzh. del. et. lith.

J. E. Smith Sculp.

London, L. Reeve & Co.

STAPELIA (Duvalia) *Corderoyi*; humilis, glaberrima, glauca, ramulis brevibus obesis procumbentibus ovoideo-oblongis obtusis sub-4-costatis, costis rotundatis remote dentatis, sinubus acutis, dentibus brevibus triangulari-subulatis patentibus basi carnosus et utrinque unituberculatis, corolla $1\frac{1}{2}$ -2 poll lata ad medium 5-loba, lobis triangularibus acuminatis sordide viridibus marginibus recurvis, apices versus fusco-purpurascentibus, sinubus setoso-glandulosis, fauce elevata pallide-lilacina filamentosa, corona staminea duplici breviter stipitata purpurea, exterior e disco crasso obtuse 5-gono, interiore e cornubus 5 brevibus crassis ovoideis exteriori impositis.

I am quite unable to identify this very curious little *Stapelia* with any described species, though it clearly belongs to Haworth's section *Duvalia*. In habit, size, and form of branches it agrees with *S. cæspitosa*, Mass., but the flowers are very much larger, and of a totally different form and colour. To the same division belong *S. radiata* (Tab. nost. 619) and *S. reclinata* (Tab. nost. 1397); but these have, like *S. cæspitosa*, small dark-coloured flowers, with very narrow corolla-lobes.

I have named this very curious and distinct species after Mr. Justus Corderoy, of Blewberry, near Didcot, an old and an eminent cultivator of succulent plants, and for many years a valued correspondent of the Royal Gardens. It flowered at Blewberry in September of last year.

DESCR. *Branches* short, procumbent, very stout, glaucous, about two inches long by three-quarters of an inch in diameter, very pale green and fleshy, obtusely 4-5-ribbed, the ribs semi-cylindric with an acute sinus between them, each bearing two to four short triangular teeth, which are fleshy at the base, and there furnished with a globose tubercle on each side. *Peduncles* solitary or in pairs, about an inch long,

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green, variegated with purple. *Calyx* of five triangular-subulate green teeth, with red-brown tips. *Corolla* about one and a half inches in diameter, 5-lobed to about the middle; lobes triangular-acuminate, dirty green, with purple brown tips, and a few long slender glandular purple hairs in the sinus, margin recurved; throat surrounded with an elevated lilac coronal disk, clothed with slender spreading purplish hairs. *Staminal-column* on a short stipes, expanded into a broad fleshy purple obscurely 5-lobed disk (the outer corona) which bears on its summit as many egg-shaped obtuse spreading horns (which form the inner corona). *Pollen-masses* bright orange, reniform.—*J. D. H.*

Fig. 1, Teeth on ribs of branches; 2, flower, with the corolla removed; 3, pollen-masses:—*all magnified.*



Class and Order.

PENTANDRIA DIGYNIA.

Generic Character.

Contorta. Nectar. duplici ftellula tegente genitalia.

Specific Character and Synonyms.

STAPELIA *divaricata*; ramis pluribus tetragonis divaricatis glabris dentatis, dentibus parvis suberectis, corolla glaberrima quinquefida: laciniis lanceolatis patentibus, margine revolutis ciliatis. *Massf. Stap.* 17. t. 22.

STAPELIA *divaricata*. Willd. *Sp. Pl.* v. 1. p. 1280. Mart. Mill.
Dict. n. 10.

The branches of this very distinct species of STAPELIA going off almost at right angles, and being long and tapering, at once mark it from every other, even when out of bloom. Communicated by J. WALKER, Esq. of Stockwell-Common, whose valuable collection contains a great many species of this very singular genus, all of which are natives of the Cape of Good-Hope.

Flowers the latter-end of the summer, and requires the same treatment as other succulent plants from the Cape.

STAPELIA ELEGANS. ELEGANT STAPELIA.

❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖

Class and Order.

PENTANDRIA DIGYNIA.

Generic Character.

Contorta. Nectar. duplici ftellula tegente genitalia.

Specific Character and Synonyms.

STAPELIA *elegans*; corollis quinquefidis hispida: laciniis lanceolatis margine ciliatis, fundo pentagono, pedunculis corolla longioribus, ramis diffusis oblongis teretiufculo tetragonis medio floriferis, Willd. *Sp. Pl.* 128 .

STAPELIA *elegant*; ramis pluribus confertis oblongis dentatis dentibus patentibus acutis, corolla quinquefida, laciniis triangularibus hispida, margine fimbriatis. *Mass. Stap.* 27



STAPELIA *elegans*, *cæspitosa*, and *radiata* (supra 619) are very nearly allied; the first, our present plant, is distinguished from the second principally by the laciniae being covered with hairs on the inside as well as ciliated at the margin; from both the second and third by being more patent. The branches of all three are very short, recumbent, and crowded together. The acuteness or bluntness of the teeth is a character not much to be depended upon, as they vary so much at different periods of their growth.

Our drawing was made at Mr. SALISBURY's Botanic Garden at Brompton, in November 1807. Native of the fand deserts called Karro, at the Cape of Good Hope.

Requires the same treatment as the other species.